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WEST INDIES IN CANADA

1909.

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PUBLICATIONS OF

The Imperial Department of Agriculture

FOR THE WEST INDIES.

The **'West Indian Bulletin.'** A quarterly Scientific Journal, containing, together with other papers, full reports of the Agricultural Conferences of the representatives of all the Scientific and Educational Institutions and Agricultural Societies in the West Indies, held under the auspices of the Imperial Department of Agriculture. Price per copy 6*d.* Post free 8*d.*

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Compliments of
H. A. Ballo

PREFACE.

The information contained in the following pages has been collected and published with the view of placing Canadian merchants in possession of reliable facts relative to the resources of the British West Indies and the possibilities for trade between them and the Dominion.

It may be interesting to give a few particulars as to the trade between Canada and the West Indies. The tables on pages 6 and 7 show that the value of Canadian imports into the British West Indies amounted, in the year ending June 30, 1908, to $2,495,241 (£519,842), while the value of the West Indian exports to Canada was $6,216,292, (£1,295,061). This does not include the Leeward Islands, for which the figures are to be had only for 1907, when the imports were £35,092 and the exports £163,441. The total volume of the trade carried on between the two countries last year was therefore $8,711,353, (£1,814,903).

In the year 1907-8, British Guiana exported to Canada produce, mostly sugar, to the value of £865,461, while the imports of Canadian goods were worth £136,475. The Leeward Islands exported during the year 1906-7, to British North America, £163,441 worth of produce; the imports being valued at £35,092. From Barbados, sugar to the value of £107,335, and molasses to the value of £154,353 were sent to Canada, and imports of the value of £101,493 received. The value of the imports from Canada into Jamaica was £163,184 or 5·6 per cent. of the total imports, and the value of the exports to Canada from Jamaica was 5·3 per cent. of the total exports. Trinidad in 1907-8 sent exports to the value of £275,247 to British North America, and received imports of the value of £118,690.

32334

It may be seen from these figures that a very considerable trade is carried on between Canada and the West Indies, and it is hoped that the recent visit of the Canadian Trade Dele a tion to ascertain in what respects business relations between these portions of the British Empire were capable of being more fully developed, together with the samples of products sent to these exhibitions, may be the means of still further extending this trade by placing the varied and valuable products, as well as reliable information with respect to them, before the Canadian public.

As is well known, the Dominion Government offers a reduction of Customs duties for produce grown in the British Colonies, and, on this and other grounds, it is desirable that closer commercial relations should be encouraged between the West Indies and Canada. The exports from the West Indies to Canada are chiefly sugar and its by-products, while their imports from Canada consist mainly of breadstuffs, fish, and provisions. The trade already built up, largely by means of Messrs. Pickford & Black's Canadian line of steamers, is considerable; but there is abundant room for expansion, especially in regard to shipments of sugar, molasses, cocoa-nuts, cacao, coffee, fresh fruits, spices, and other tropical produce.

It is hoped that this booklet will not only afford information in regard to the exhibits themselves, but also assist in making known the considerable resources of the West Indies, and the favourable conditions now existing for the mutual exchange of commodities on a still larger scale between the two chief groups of British dependencies in this part of the world.

(Sgd.) FRANCIS WATTS,
Imperial Commissioner of Agriculture
for the West Indies.

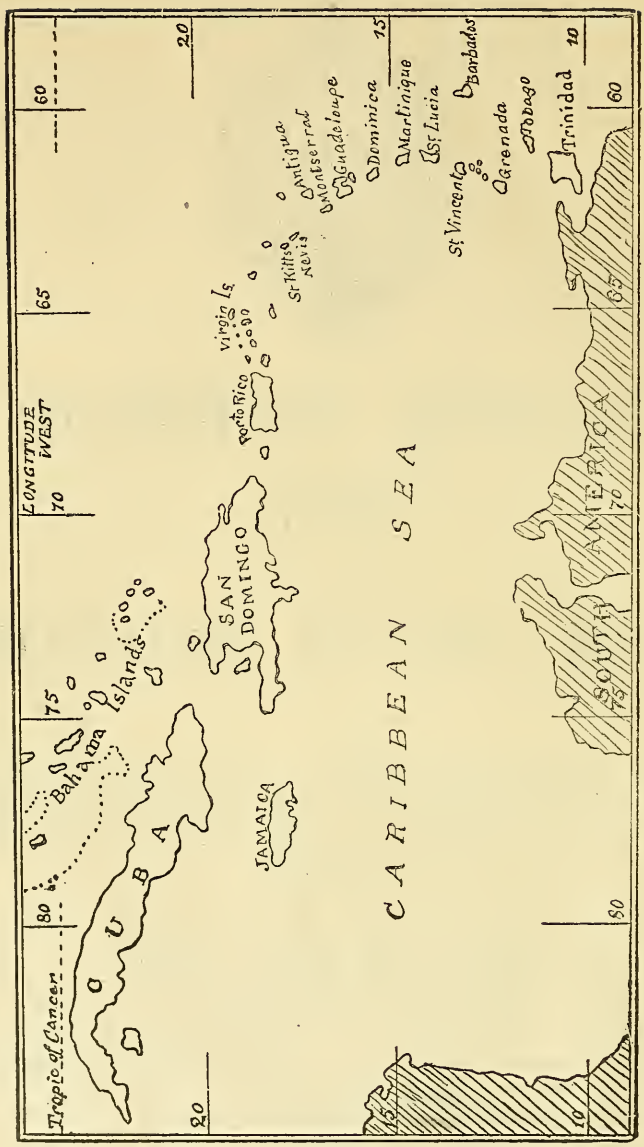
Barbados,
July 13, 1909.

Canadian Exhibitons, 1909.

WEST INDIAN SECTION.

The '**British West Indies**' include the greater number of the chain of islands which fringes the north and western sides of the Caribbean Sea. By custom, British Guiana, a part of the mainland of South America, is usually included in the term, and sometimes the Bahamas also.

Politically they form six colonies. Counting from the south these are (1) BRITISH GUIANA, with its three counties of Demerara, Essequebo, and Berbice. (2) TRINIDAD, with its dependency of Tobago. (3) The WINDWARD ISLANDS—Grenada, St. Vincent, and St. Lucia, with numerous small islets, the Grenadines. (4) BARBADOS. (5) The LEEWARD ISLANDS—Dominica, Montserrat, Antigua (with Barbuda and Redonda), St. Kitts-Nevis (including Anguilla), and the Virgin Islands (Tortola, Virgin Gorda, and Anegada). The chain, which runs almost due north and south from Trinidad to Antigua, here makes a right angle, and it is not until after passing Porto Rico, and San Domingo (Hayti) and traversing some 800 miles, that the sixth colony, JAMAICA, is reached, with its dependencies, the Turks Islands and the Cayman Islands.



Sketch Map of the West Indies.

PRODUCTS OF THE WEST INDIES.

The most important product of the West Indies is **Sugar,** with its by-products **Molasses and Rum.** Their total value is about £3,000,000 per annum. It is the main industry in British Guiana, Barbados, Antigua, and St. Kitts-Nevis. **Molascuit,** a cattle food prepared from molasses and the crushed fibre of the sugar-cane is exported from British Guiana. Many islands, formerly solely 'sugar islands,' have now turned their attention to other products.

Cacao ranks next in importance. It forms practically the sole crop of Grenada, and in Trinidad is worth about double the value of sugar. It is also an important industry in Jamaica, St. Lucia, and Dominica, and is receiving attention in British Guiana. The total value of cacao exported in 1907-8 was about £2,934,738.

Lime Juice is made on a large scale in Dominica and Montserrat, and to some extent in Jamaica. The exports of raw and concentrated lime juice increased during the year 1905-6, as also did the exportation of green and pickled limes, while the manufacture of citrate of lime is being taken up. A syndicate to make citric acid on a large scale has been formed in British Guiana and has obtained a 2,000-acre grant from the Government.

Excellent results have been obtained in the establishment of a **Cotton** Industry, particularly in Barbados, St. Vincent, Montserrat, Antigua, and St. Kitts-Nevis. During the crop year 1908 (from October 1, 1907 to September 30, 1908), 1,232,417 ℔. of Sea Island cotton, of the value of £145,424 were exported.

The **Fruit** trade has within recent years made wonderful strides. **Bananas, Oranges, Grape-fruit** and **Pine-apples** retain the first place in the exports of Jamaica with an estimated value of £1,193,783 for the year 1907-8—an increase of £221,510 over the year 1905-6.

Timber and **Balata** are supplied by British Guiana and Trinidad, and **Dye-woods,** such as logwood, fustic, etc., by Jamaica.

St. Vincent has an important **Arrowroot** industry, the exports in 1907-8 being valued at £25,555.

Amongst the products of minor importance mention should be made of **Coffee** from Jamaica and British Guiana; **Nutmegs** from Grenada; **Pimento** or Allspice from Jamaica; and **Cocoa-nuts,** including **Copra,** from Jamaica, Trinidad and British Guiana.

Crops such as **Sweet Potatos, Yams, Cassava,** etc., are grown on a large scale throughout the different colonies, but are mainly used for local consumption.

Rice is successfully grown in British Guiana, Jamaica, Trinidad, and St. Lucia. There has been a rapid extension of rice growing in British Guiana in recent years, and consequently the imports of this commodity are now gradually, but steadily, decreasing. In 1908-9 some £50,000 worth was exported.

Cattle are reared in Jamaica, British Guiana, Trinidad and Tobago, and the Virgin Islands, and are much in demand on estates for draught work. **Horses** and **Mules** are raised in Jamaica.

The **Mineral Products** are comparatively insignificant. **Gold** and **Diamonds**, of the value of about £400,000 are exported annually from British Guiana. The export of **Asphalt** annually from the Pitch Lake of Trinidad is worth about £120,000 to that colony. Barbados exported about £6,930 worth of **Manjak** in 1907-8, and Trinidad to the value of £3,381. It is expected that the mineral resources of Trinidad may, in the near future, become of considerable importance.

On pages 41-59 notes are given on the principal products of the West Indies. These indicate the islands in which the different commodities are produced and their approximate value.

VALUE OF EXPORTS.

The relative importance of the products of the islands is shown in the table on the next page. The exports of sugar, molasses, and rum are given first, and then the other more important exports. The predominant value of the sugar industry to the welfare of the West Indies is clearly brought out, as well as the relative position which sugar plays in each colony or presidency. The figures given are approximately accurate for the year 1907-8, except in the case of the Leeward Islands and St. Lucia where the figures for 1906-7 are given.

In round numbers, sugar and its by-products contribute about £3,000,000 to the total £7,000,000 worth of produce exported, or nearly 45 per cent. of the combined agricultural and mineral productions exported from the West Indies.

The value of the cacao exported is about £2,034,738, some £48,500 worth being taken by Canada.

The fruit industry is of considerable importance to the West Indies—particularly Jamaica, from which about £1,000,000 worth of produce is exported yearly—and in this direction it is worthy of notice that the value of the exports of West Indian fruits to Canada has increased from £16,300 in 1905 to £36,450 in 1907.

Exports from the British West Indies.

Colony.	Sugar, Rum, Molasses.	Other Important Exports.	Total Exports. Produce and Manufacture of Colony.
	£	£	£
BRITISH GUIANA ... (1908-9.)	1,450,871	Gold 271,300 Molascuit 23,193 Balata 98,128 Timber, etc. 16,432 Rice 50,064	1,889,989
TRINIDAD AND TOBAGO ... (1907-8.)	536,891	Cacao 1,786,386 Asphalt 162,332 Bitters 34,866 Cocoa-nuts 45,233	2,612,801
WINDWARD ISLANDS Grenada... ... (1906-7.)	Nil.	Cacao 361,128 Spices 35,953 Cotton* 6,351	410,658
St. Vincent .. (1907-8.)	4,708	Arrowroot 25,555 Cotton 30,786 Vegetables 2,211 Cacao 4,959	81,812
St. Lucia ... (1906-7.)	53,687	Cacao 47,291	109,407
BARBADOS ... ... (1907-8.)	232,974	Cotton 83,362 Fruit and Vegetables 9,295 Manjak 6,930	613,740
LEEWARD ISLANDS. Antigua... ... (1906-7.)	81,996	Cotton* 5,178 Fruit and Vegetables 2,259	92,405
St. Kitts-Nevis ... (1907-8.)	114,509	Cotton 26,032	140,541
Dominica ... (1907-8.)	250	Lime Products 55,612 Cacao 30,362	92,239
Montserrat ... (1906-7.)	2,097	Limes & Lime Juice 6,222 Cotton* 6,637 Cattle & Stock 942	18,327
Virgin Islands ... (1906-7.)	Nil.	Cattle & Stock 3,657 Cotton* 335	5,760
JAMAICA ... ... (1907-8.)	284,726	Bananas 842,689 Coffee 141,302 Oranges 90,468 Pimento 70,246 Dye-woods 80,958 Logwood extract 68,281 Cacao 52,813 Tobacco & Cigars 35,378	2,214,829
Total	2,762,688		8,286,288

* Figures are given for the crop year, October 1, 1906 to September 30, 1907.

Exports from British West Indies* to Canada.

Articles.	1905.	1906.	1907.
	$	$	$
Asphalt	1,245	850	2,611
Cacao and preparations ...	64,685	48,553	92,852
Cocoa-nuts	46,043	53,553	58,960
Coffee	7,155	16,808	11,768
Drugs, Dyes, Chemicals, etc.	4,185	2,561	220
FRUITS:			
Bananas	21,297	46,350	97,019
Oranges, lemons, and limes	47,386	54,816	67,632
All other	9,618	12,817	10,309
Total Fruits	78,301	113,983	174,960
Hides and skins other than fur	68,078	170,180	89,769
Lime juice, crude only ...	6,845	4,889	8,489
Metals and Minerals, and manufactures of	8,438	2,859	4,509
Packages, all kinds	6,740	6,788	14
Salt	8,807	14,187	16,285
Spices	9,973	4,357	20,412
Spirits and wines	21,277	23,207	14,573
Sponges	2,230	2,569	Nil
Sugar and Molasses	8,237,725	7,033,664	9,439,662
Tobacco	1,209	1,097	Nil
Vegetables	1,585	454	Nil
Wood and manufactures of	600	47	996
Wool and manufactures of	10	276	85
All other articles	11,924	9,567	63,755
Coin and Bullion	126	3,521	Nil
Total Exports ..	8,587,181	7,513,950	10,008,940

* Including British Guiana, and Bahamas to 1905 and 1906. No data from Bahamas to hand for 1907.

Imports into British West Indies* from Canada.

Articles.	1905.	1906.	1907.
	$	$	$
Ale, Beer, and Porter ...	327	143	6
Animals, living	32,485	20,659	6,423
Books, etc.	5,586	10,856	1,910
BREADSTUFFS :—			
Oats	152,873	118,000	351,412
Other Grain and Grain products	949,968	571,742	380,966
TOTAL BREADSTUFFS:	1,102,841	689,742	740,717
Carriages, Bicycles and parts of	5,424	6,978	5,006
Coal	82,559	77,657	102
Cordage, Rope, and Twine ..	34,973	39,939	33,025
Cotton, and manufactures of	1,756	2,927	2,538
Drugs, Dyes & Chemicals ...	64,963	147,463	7,141
Fish, and fish products ...	1,188,585	1,472,634	764,010
Fruits	15,373	8,651	9,294
Hay	23,465	24,206	8,799
Leather, and manufactures of	35,951	24,621	11,670
Metals and Minerals, and manufactures of	4,988	10,501	21,245
Musical Instruments ...	2,155	925	441
Oils	5,532	5,176	3,993
Paper	17,840	13,190	8,258
Provisions (Meat, Butter, Cheese, etc.)	237,605	211,018	61,010
Soap	17,883	36,305	22,486
Spirits and Wines	10,525	9,617	3,162
Sugar	1,242	1,288	569
Tobacco	773	1,386	376
Vegetables—principally potatos	119,137	115,756	103,010
Woods and manufactures of	346,523	241,209	312,851
Other articles (Miscellaneous)	72,405	70,783	67,991
Total Imports ...	3,430,946	3,243,630	2,086,693

* Including British Guiana, and Bahamas for 1905 and 1906. Data for Bahamas (1907) not to hand.

IMPERIAL DEPARTMENT OF AGRICULTURE FOR THE WEST INDIES.*

The Imperial Department of Agriculture was established on October 1, 1898, on the recommendation of the West India Royal Commission of 1896-7. The cost for ten years to March 31, 1908, amounting to £17,420 per annum was provided from Imperial funds, after which date it has been decided that the Department is to continue to be maintained for a further period of five years with gradually reduced grants from the Imperial Government. Steps have already been taken in the several Colonies concerned to contribute local funds for the purpose of continuing the efforts of the Department on the same lines as hitherto. This will ensure that the Department is maintained in an efficient condition for some years to come.

The work entrusted to the Department is to aid in the maintenance and the supervision of the Botanic and Experiment Stations in the West Indies, devoted to the improvement of sugar and other industries, to establish agricultural schools, the teaching of agriculture in elementary and secondary schools, and the granting of agricultural scholarships.

The Head Office of the Department with its scientific and clerical staffs, is located at Barbados as the most central situation. Sir D. Morris, K.C.M.G., for twelve years assistant-Director of the Royal Gardens at Kew, formerly Director of the Botanical Department, Jamaica, and scientific Adviser to the West India Royal Commission of 1896-7, was appointed Imperial Commissioner of Agriculture on September 1, 1898, and held the office with the greatest success for ten years. On his retirement in 1908, his services were retained for advising the Secretary of State in Tropical Agriculture. The present Commissioner is Dr. Francis Watts, C.M.G. He corresponds directly upon all matters concerning the general work of the Department with the Colonial Office; on matters affecting Colonial establishments and expenditure he corresponds with the several Governments concerned. The Imperial Commissioner is consulting Officer in agricultural matters to the Governments of Jamaica, British Guiana, and Trinidad. He visits these Colonies, and affords assistance when required in regard to the administration of the local Agricultural departments, the outbreak of diseases, and the general development of planting industries. He is in administrative charge of the Botanic and Experiment Stations, maintained for the distribution of economic plants, and the improvement of sugar, cacao, limes, fruit, cotton, and other crops, also of the agricultural schools and local experiment plots at Grenada,

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* From the Colonial Office List, 1909.

St. Vincent, St. Lucia, Barbados, Dominica, Montserrat, Antigua, St. Kitts-Nevis, and the Virgin Islands.

The publications issued by the Imperial Department of Agriculture in the West Indies number about 50,000 copies annually. The *Agricultural News* (Vols. I to VII) is a fortnightly popular review, with a wide circulation in the tropics of the old and new Worlds. The *West Indian Bulletin* (Vols. I to IX) is a quarterly scientific journal dealing specially with research and experimental works in tropical countries. In addition are issued numerous pamphlets (59 in all) dealing with special subjects; also annual progress reports on Sugar-cane experiments, the work of the Botanic Stations, and efforts to extend agricultural education in elementary and secondary schools

The following are the principal officers on the staff of the Department:—

Imperial Commissioner of Agriculture for the West Indies	FRANCIS WATTS, C.M.G., D.Sc., F.I.C., F.C.S.
Scientific Assistant	WALTER BIFFEN, B.Sc.
Entomologist	HENRY A. BALLOU, M.Sc.
Mycologist and Agricultural Lecturer	F. W. SOUTH, B.A. (Cantab).
Chief Clerk	ALLEYNE GRAHAM HOWELL.
Assistant Clerk	MURRELL B. CONNELL.
Junior Clerk	ERIC G. ST. HILL.

Honorary Consulting Chemist	PROF. J. P. D'ALBUQUERQUE, M.A., F.I.C., F.C.S.

Adviser at the Colonial Office	SIR DANIEL MORRIS, K.C.M.G., D.Sc., D.C.L., M.A., F.L.S.

WEST INDIES.

BRITISH GUIANA.

The only European possessions in South America are three in number, and are situated on the central portion of the region called Guiana, or Guyana, which stretches along the northern coast of the continent from the mouth of the Orinoco River to that of the Amazon River and inwards to Brazil. These are the colonies of British, Dutch, and French Guiana.

The most westerly one is British Guiana, which extends westward from the eastern limits of Venezuela to Dutch Guiana, and north of Brazil to the coast on the Atlantic Ocean. The extreme limits of the colony touch the parallels of 0° 41′ and 8° 33′ 22″ north latitude, and the meridians of 56° 20′ 15″ and 61° 23′ 24·7″ west longitude.

British Guiana includes the old settlement of Demerara, Essequibo, and Berbice, and has a sea-board of about 270 miles trending in a south-easterly direction, with a mean depth of about 500 miles. It is equal in extent to the combined size of England, Scotland, and Wales, the area being about 90,000 square miles. About 130 square miles are under cultivation and the remainder is densely covered with exuberant primaeval forest, except in those parts where there are broad open flats and undulating grassy plains or savannahs, and mountainous grass-clad country.

The coast lands are flat, and are for the great part swampy. They are slightly below the level of ordinary spring tides, so that sea-walls and other defences have had to be constructed to protect the settled parts from being flooded by high tides. They form part of an alluvial belt which rises gradually from the sea-level and extends inland for a distance varying from 10 to 40 miles. It is on this belt that all the sugar estates, and the greater part of the cultivated areas are situated.

The alluvial belt is succeeded by a slightly elevated and undulating belt composed of sandy and clayey sedimentary soils. It is traversed in some places by sand dunes which rise from 50 to about 180 feet above the sea-level. Grass-covered downs occur on the banks of some of the rivers that traverse this region, but the greater part of the tract consists of high forest.

Beyond these belts, southwards, the country rises between the river valleys, which are in many parts swampy; and as it approaches the sources of the larger rivers attains a height of

about 900 feet above the sea-level on the western boundary, and about 400 feet above the sea on the eastern boundary. It is diversified by numerous low hills and valleys and contains three principal mountain ranges. In the southern and eastern parts there are many scattered, isolated mountains. This elevated portion occupies about eleven-twelfths of the area of the colony, and with the exception of large, flat, grass-clad plains or savannahs, is entirely forest-clad.

The colony is traversed by many large rivers, which, with the numerous tributaries and branch streams, form a vast net-work of waterways that in the absence of roads, furnish a ready, if somewhat difficult, means of access to the interior. All the rivers are impeded above where the tide reaches, at distances from the coast, by numerous rapids, cataracts, and falls, which render the navigation of the upper reaches difficult, and in some parts dangerous.

The largest of these falls is the Kaieteur on the Potaro, which has a width, in the rainy season, of nearly 400 feet, with a perpendicular drop of 741 feet. It is succeeded for about 3 miles below by a series of very large cataracts having a further drop of 81 feet.

Counties, Towns, etc.

The colony is divided into the counties of Demerara, Essequibo, and Berbice. The county of Demerara is the most important, although it is by far the smallest, for in it is placed Georgetown, the capital and principal port of the colony. This town is situated at the mouth of the Demerara River and has a good harbour. Vessels of fairly large size can come into the harbour at any state of the tide, but there is a bar near the Lightship which is an obstacle to vessels drawing more than 19 feet 3 inches of water. Georgetown is well laid out on flat land with wide streets running at right angles to each other. The streets are lit with electric light, and electric tramcars run throughout practically the whole town. It possessed a population of 53,176 at the last census taken in 1891, and its population is now (1909) estimated by the officers of the Town Council as being 62,000. The only other town in the colony is New Amsterdam, the former capital and chief port of Berbice. It is situated about 5 miles from the mouth of the Berbice River on the eastern bank, and has a population of about 9,000.

There are many large and small villages scattered along the seacoast, and on the margins of the rivers near the sea, and there are also several important settlements and Government Stations on the higher reaches of the rivers.

Population of British Guiana.

The estimated population of British Guiana is about 300,000. On the settled coast lands the population is very mixed, largely made up of negroes and coloured natives of the colony and of the West Indian islands, and East Indians. There are also a few Chinese and some half-bred South American Indians. There are a fair number of Portuguese, and a few Europeans of

other nationalities. On some parts of the coast land, and especially in the hinterlands there are several tribes and sub-tribes of aboriginal Indians. In the vicinity of the head streams of the Essequibo River an exceedingly interesting tribe called the Loui-wois lives. Of these and of other small tribes along the southern boundary of the colony, but little is at present known.

Climate.

The climate of British Guiana is, as would be expected from its geographical position, hot, but it is not unhealthy. The mean temperature throughout the year is about 84° F., the highest mean maximum during 1908 being 87° F., in the months of September and October, and the lowest minimum 74° F. in the months of January and February. The heat, which is greatly tempered by cool breezes from the sea is felt more from July to October than at other times, owing to the partial cessation of these breezes. The seasons are divided into dry and wet. There is a long dry season from the middle of August to near the end of November, and a shorter, less sharply defined one in March and April; the remaining two periods are termed the short and long wet seasons, respectively. The long dry season is the only one that is sharply marked in every year, the short dry season not infrequently turning out a very wet one, whilst the short wet season is at times a period of more or less well-marked drought. The annual rainfall for the past thirty years averaged about 92·8 inches in Georgetown.

Industries and Productions.

At present, the sugar-cane, with its products, is the most important of the agricultural resources. There are forty-five sugar estates, with a total area of 154,160 acres. Of this acreage, 71,310 acres are under sugar, 3,560 under rice, 1,344 under plantains and other provision crops, 81 under coffee, cocoa-nuts, etc., and 77,865 acres are uncultivated, being used as pasture lands. The area of land under sugar, despite low prices and attacks of diseases in past years, is practically the same as it was twenty years ago, while the total crops of sugar products are the same or, possibly, somewhat higher. Fifty years ago the number of sugar estates was about four times what it is to-day, but low prices and keen competition have necessitated a materially lessened cost of production, and a centralized management in large factories.

During 1908-9, the colony exported 115,213 tons of sugar, 3,501,185 proof gallons of rum, 146,885 gallons of molasses, and 9,277 tons of molascuit (a cattle food). The bulk of the sugar now made is high-class vacuum-pan sugar for refining purposes, while certain quantities of the far-famed 'Demerara Crystals,' the 'vintage' product of the Bourbon cane are still exported.

The next important agricultural industry is that of rice growing. This industry is one pursued by small farmers, and its development has been mainly in the hands of East Indian

settlers in the colony. Recently, however, larger capitalists have been attracted into the industry and mechanical cultivation is being experimented with. From 6,000 acres under rice in 1900, it has gradually risen until during the year 1908-9, 37,851 acres were returned as being under cultivation. The imports of rice have fallen from over 11,000 tons in 1897-8 to 950 in 1907-8, while nearly 4,000 tons, of a value of $240,308 were exported during last year, mainly to the West India islands. The rice produced is of first-class quality, quite equal to any in the world.

Cacao planting is an industry of some promise in parts of the colony, especially up the lower reaches of the rivers. In 1908-9, 2,181 acres were under this crop, but their yield is mostly used for local demands of the colony. The export is, therefore, small, but that which is exported always commands a good price.

About 550 tons of balata were last year (1908-9) collected in the forests and exported from the colony, but the extension of this important industry depends greatly upon the discovery of balata tracts, where the expenses of collection and transport will allow a fair rate of profit being made. A small amount of rubber was collected in the forest, and of late a good deal of interest has been taken in the prospect of the collection of rubber and also in its cultivation. Experiment stations are being established, and the planting of rubber is rapidly developing in several parts of the colony. The Para rubber tree (*Hevea brasiliensis*) and the Guiaca or native tree (*Sapium Jenmani*) give every promise of success. The growth of the former during the past two years has been as rapid as that of similar trees in the East, and samples of rubber from the latter have recently been reported upon as being almost equal in quality to the best plantation Para rubber produced. Large areas in many parts of the colony appear to be admirably suited for the cultivation of certain kinds of rubber trees, and grants of Crown land can be obtained on very liberal terms.

Gold and Diamond working is carried on in many parts of the colony. There were exported in 1908-9, 74,001 oz. of gold, of a value of $1,302,241, and the royalty received amounted to $51,567. The diamonds exported during 1908-9 amounted to 5,063 carats, valued at $40,733. Up to the present only a comparatively small portion of the whole colony has been carefully searched for auriferous or for diamantiferous deposits, and there are vast tracts of land still unexamined; but in the parts which have been examined, the gold-bearing districts discovered have a total area of about 4,600 square miles, and the conditions under which the metal occurs in them have been fairly well determined. The geology of the 'Goldfields of British Guiana' by Professor J. B. Harrison has recently been published, and affords information of the greatest value to prospectors and others interested in the gold-mining of the colony.

The value of the principal exports besides sugar and gold for 1908-9 were: Balata $471,016, rice $240,308, timber $78,881, charcoal $39,187, cacao $16,298, firewood $14,663, shingles $10,067, coffee $7,217, hides $6,249, and fish glue $4,243.

Coffee, during the early part of the last century was largely cultivated in the county of Berbice. About the time of the cessation of slavery, circumstances necessitated the gradual abandonment of the cultivation. At the present time about 1,431 acres are occupied with coffee, the Arabian or so-called Creole kind, and the more recently introduced Liberian variety being the principal varieties under cultivation. Large areas of low-lying land in British Guiana are well suited to the growth of coffee, but the low prices tend to keep any considerable increases of acreage in check. The quality of British Guiana coffee is excellent and it always commands a good price.

The area under cocoa-nuts has been steadily increasing for some years past, and now some 8,315 acres are under cultivation. The great majority of the nuts grown, are utilized in the colony for the preparation of oil, which has gradually replaced the imported cocoa-nut oil, and has retarded the importation of other edible oils.

Ground provisions occupy 19,289 acres, and the development of other industries is receiving considerable attention. There is every hope that the establishment of the cultivations of limes on a large scale, and the encouragement offered to smaller growers by a syndicate of citric acid makers will do much towards the development of lime growing as a subsidiary industry in the colony. There are very large areas of land along the coasts of the colony which, when sufficiently drained, are very well adapted for pastural pursuits, especially for cattle raising, and there are very extensive savannahs in the far interior that may at some time become large cattle ranches. At present there are estimated to be 75,000 cattle, 18,000 sheep, 14,000 goats and nearly 2,000 horses on the coast land farms, and plantations.

The forests, with which the interior of the colony is, for the most part, covered, abound in woods of rare beauty and value. Some of the hardwoods are from their remarkable durability, peculiarly suitable for house and ship-building purposes, while others are equally prized for the manufacture of household furniture. Their utilization is largely checked by the difficulties of transportation in the interior of the colony, and the only one of the many valuable timbers growing in the forests which is exported to any extent is greenheart. Quantities of lumber, shingles, charcoal, and firewood are exported to the West India islands.

The chief imports are breadstuffs, beef, pork, fish, butter, cheese, coal, oils, spirits, tobacco, earthernware, glassware, hardware, cutlery, and textiles.

There are local factories for the manufacture of biscuits, matches, soap, candles, chocolate, boots, aerated water, citrate of lime, etc.

Books of Reference.

A list of books and pamphlets which may be referred to for further information in respect to the colony will be found on p.p. 33-39. From these works a large part of this brief sketch has been abstracted.

TRINIDAD AND TOBAGO.

TRINIDAD.

The island of Trinidad lies about 16 miles to the eastward of Venezuela. Its average length is about 48 miles, and its average breadth about 35 miles, its area being 1,754 square miles. The colony includes the island of Tobago.

The chief town and principal port is Port-of-Spain (population by the census of 1901, 54,100), situated on a gently inclined plane near the north-east angle of the Gulf of Paria. Ten miles of electric tramway and 500 miles of telephone have been constructed in Port-of-Spain and its environs. The telephone also extends to some of the country districts. The next most important town and port is San Fernando (population in 1901 census, 7,613), about 30 miles south from Port-of-Spain.

General Description.

There are three ranges of hills running roughly east and west. There are numerous rivers, but none of them of any size or navigable, and all running east or west.

Of the total area of the colony, which is estimated at about 1,195,500 acres, the alienated acreage, at the end of March 1906, was estimated to be approximately 542,308 acres. About 312,000 acres are under cultivation; 577,692 acres remain ungranted.

Industry and Productions.

A pitch lake, 114 acres in extent, is situated in the ward of La Brea, distant by water by about 30 miles from Port-of-Spain. It is of considerable value, the revenue derived by the Government from it in 1906-7 being £41,616.

The soil is varied, extremely fertile, and excellently adapted to the growth of tropical products, more particularly of sugar and cacao, which are its staples. The quantities exported in 1906-7 were: sugar, 900,088 cwt.; and cacao, 295,796 cwt., of which 246,169 cwt. were produced in the colony. Cocoa-nut products showed a substantial increase in 1906-7, the value of the nuts exported being £40,500, and that of copra £24,200. Calculating copra and oil at their equivalent in nuts, the exports of cocoa-nuts reached 23,900,000. An unprecedented demand for cedar forced prices up, and the value of the 1906-7 exports af timber (£57,908) exceeded that of the total of the ten previous years. Molasses, rum, bitters, balata gum, fruit, manjak, and asphalt are also exported. In the near future, it is expected that the mineral resources of the colony—petroleum and manjak—will become of considerable importance.

The chief imports are textiles, flour, rice, dried fish and meat, hardware, machinery, and lumber.

In 1906-7, Canada sent 5·5 per cent. of the total imports, but these were less than in 1905-6, flour and fish being the chief sources of the decline. Among manufactured articles,

biscuits and soap of Canadian origin appear to be obtaining a secure footing. Canada took 10·2 per cent. of the total exports, her purchases of hides, chiefly of Venezuelan origin, steadily growing.

Climate.

The climate of Trinidad is healthy, and by no means hurtful to Europeans, provided they take reasonable precautions. The average rainfall for the last forty-six years, 1862 to 1907, was 72·39 inches. The mean temperature during the year 1906-7 was 78·0° F., the maximum being 89·3° F. in October, and the minimum 66·8° F. in February, while the rainfall was 70·40 inches.

TOBAGO.

Tobago* is 26 miles long and 7½ at its greatest breadth, and has an area of 114 square miles, or 73,313 acres, of which about 10,000 acres are under cultivation. About 15,000 acres of land were unowned, and have been now re-vested in the Crown.

Scarborough, the principal town, is on the south side of the island, about 8 miles from the south-western point, and is situated at the south-western base of a hill, 425 feet above the level of the sea, on which stands Fort King George, now without a garrison. The town had a population, according to the census of 1901, of 769.

Industry and Productions.

Sugar, rum, molasses, cocoa-nuts, and live stock form the principal articles of export. Cacao and rubber are now, however, being fairly extensively planted. The first sugar exported was from an estate on the windward side of the island, in the year 1770. In 1780 there were only 3,000 hogsheads shipped; this was increased in 1805 to no less than 15,327 hogsheads. Cotton and indigo were formerly exported. In 1780, 2,619,000 lb. of cotton and 27,000 lb. of indigo are stated to have been shipped to England. In some districts, cotton is again being grown, and it promises to be very successful.

WINDWARD ISLANDS.

GRENADA.

Grenada is the most southerly of the Windward group. It is mountainous and very picturesque, its ridges of hills being covered with trees and brushwood.

The island abounds in streams, and in mineral and other springs. The mountains are chiefly volcanic. The Grand Etang, a lake on the summit of a mountain ridge 1,740 feet

*Detailed information in regard to Tobago has been issued by the Imperial Department of Agriculture as Pamphlet No. 41. Price 7½*d.*, post free.

above the level of the sea, and 7 miles from the town of St. George's, and Lake Antoine, both old craters, are among the most remarkable natural curiosities. Near the former a sanitorium is established.

St. George's, the principal town, has a fine harbour, and owing to its situation, healthiness, and great natural advantages, including a plentiful supply of water of the purest quality, offers exceptional inducements as a port of call and coaling station for steamers. The town had a population of 5,198 by the census of 1901.

Total acreage of land, exclusive of Carriacou, 76,548 acres; area of Carriacou, 8,467 acres.

Climate.

The climate in the dry season is delightful. In the wet season, as in all other tropical islands, it is damp and hot. But for six winter months, say from December to May, it is excellent, and is healthy at all times. The average annual rainfall at St. George's for the last fourteen years was 79 inches, and the highest and lowest readings of the thermometer for the last five years were 89·8° and 67·8° respectively, the average mean temperature being 78·8° in the shade. The rainfall in other parts of the island is much greater; at the Grand Etang, in 1907, it was 131·19 inches.

The island is a great health resort for the neighbouring colony of Trinidad, and in addition to the restoring influence of the climate, it affords excellent sea-bathing.

Industry and Productions.

The prosperity of the island, like that of its neighbours, depends almost entirely upon the planting industry. Unlike the other islands, however, it has long ceased to be a sugar-producing colony, and has therefore not suffered as they have from the depreciation of the value of cane sugar. There are very few estates at present in sugar cultivation. A considerable quantity of rum is manufactured for local consumption, the total number of gallons in 1908 being 52,948.

The chief produce of Grenada is, and has been for some time, cacao; of which, 64,119 bags (about 101,566 cwt.), of the total value of £311,519, were shipped in 1908. When the above shipment is compared with the shipments of 1885 (49,107 cwt.), and of 1880 (42,154 cwt.), it will be seen that the cultivation of cacao has largely increased.

Attention has been turned with some success to the cultivation of other economic plants, such for instance as coffee, kola nuts, cloves, vanilla, pepper, cardamoms, cocoa-nuts, etc. Nutmeg cultivation occupies a prominent position, and is being largely developed. So general is the cultivation of spices carried on here, that Grenada is already called 'The Spice Island of the West.' The export of spices has increased from £3,483 in 1880, to £19,970 in 1908.

In Carriacou, the largest of the Grenadines, Marie Galante cotton is the staple product, its cultivation having never been wholly abandoned there.

Tropical fruits of almost every description, and of the finest quality, are always abundant, and large quantities are shipped to the Barbados and Trinidad markets. The principal food resources are yams, sweet potatos, tannias, pigeon peas, plantains, Indian corn, cassava, breadfruit, etc.

The forests produce valuable timber, such as bullet wood, locust, mahogany, white cedar, galba, etc.; and firewood is exported to Barbados.

The main imports are food stuffs, textiles, timber for building purposes, and hardware.

The principal exports, besides those products already mentioned, are cotton and cotton seed, turtles and turtle shell, hides and skin, fruit, and live stock (principally goats, sheep, pigs, and poultry).

ST. LUCIA.

St. Lucia is situated at a distance of 21 miles to the north-east of St. Vincent. It is 24 miles in length, and 12 at its greatest breadth: its circumference is 150 miles, and its area 233 square miles—rather less than Middlesex.

Castries, the capital of the island, contains a population of about 8,000 souls. Next in importance is the town of Soufrière, containing a population of about 2,300 souls. Castries has an excellent harbour, probably the best in the whole West Indies. The facilities offered by the port as a port of call and coaling station are widely recognized.

General Description and Climate.

The scenery is of peculiar beauty, even as compared with that of other West India islands, and in the neighbourhood of the Pitons has the less common element of grandeur. These are two cone-shaped rocks rising sheer out of the sea to a height of nearly 3,000 feet, and near them is the crater of a volcano and a Soufrière, the ordinary characteristics of the Caribbean Cordillera.

The temperature from December to April seldom exceeds 80° F., even at mid-day, in spots situated a few hundred feet above the sea, and a fresh trade wind blows continuously.

The danger from venomous reptiles is much exaggerated. Owing to the introduction and spread of the mungoose, snakes are now but rarely met with. Among white inhabitants, consumption and other of the most fatal diseases of temperate climates are almost unknown.

Industry and Productions.

Sugar, cacao, logwood, and spices are produced. There are four sugar 'Usines' with the best machinery, and the export of cacao is increasing rapidly.

A considerable amount of land is in the possession of the Crown and may be purchased in small or large lots at £1 per

acre payable by yearly instalments of 5*s*., and in the event of a certain area being put into permanent cultivation before the due date of the last instalment, that instalment may be remitted. Under the Crown Lands Regulations, the period over which (in certain cases) the payment of the purchase money may be spread is ten years. Some of this land is virgin forest of great fertility and will grow any kind of tropical fruit trees or industrial plants.

ST. VINCENT.

St. Vincent is 18 miles in length, and 11 in breadth, and contains about 85,000 acres of land.

Kingstown the capital of St. Vincent, is situated at the side of an extensive bay, at the south-western extremity of the island. It contains a population of about 4,000.

General Description.

The most striking natural feature of the island is its 'Soufrière' or volcano. This mountain is situated at the northern extremity of the island, and rises to about 4,048 feet above the level of the sea. After remaining dormant for a period of ninety years, it broke into violent eruption on May 7, 1902, when the entire northern half of the island was devastated, and nearly 2,000 lives were lost. The Soufrière remained intermittently active throughout 1902, and there was a further eruption in March 1903, since when it has remained quiescent.

Climate.

In the dry season, December to June, the climate is charming. In the wet season, and especially from August to November, the climate is damp and hot. but not at all unhealthy, and fever is almost unknown. The nights are cool all the year round. The average rainfall for the last fifteen years is 108·83 inches. The highest reading of the thermometer during 1907-8 was 80·30° F., and the lowest 75·6° F., the mean monthly temperature being 77·7° F. in the shade.

Industry and Productions.

Sugar, rum, cacao, and excellent arrowroot are produced. The cultivation of ground nuts and spices is also attracting attention, and cotton is now extensively planted, for the ginning of which a Government factory has been erected. St. Vincent cotton is of excellent quality and has fetched as much as 30*d*. per ℔. during the last crop. It is all exported to the United Kingdom. A large proportion of the cultivable land is owned by a few individuals; portions of Crown lands, which hitherto remained uncultivated, are in process of alienation to peasant proprietors, and several estates have recently been purchased by the Government with the aid of the Imperial grant, and are being allotted to the same class of settlers. The forests produce excellent woods.

BARBADOS.

Situation and Area.

Barbados is situated in latitude 13° 4′ north, and longitude 59° 37′ west, and is the most easterly of the Caribbee Islands. It is nearly 21 miles long by 14 wide, and contains an area of 106,470 acres, or about 166 square miles—a little larger than Rutland.

History.

The exact date of the discovery of Barbados is not known. It is said to have been first visited by the Portuguese, who, finding it uninhabited and rude in appearance, named the island *Los Barbados*, from the number of bearded fig-trees which they found. It was nominally taken possession of by the English ship *Olive* in 1605, when it was almost uninhabited. In 1625 Sir William Courteen, a London merchant, under the protection of the Earl of Marlborough, who held a grant of the island from James I, fitted out two large ships, only one of which arrived at Barbados, and the party, which consisted of some thirty persons, landed on the leeward side of the island, formed a town called James' (or Hole) Town, and appointed Captain William Deane their Governor. In 1627 the Earl of Carlisle obtained a grant from Charles I of all the Caribbee Islands. This grant was opposed by the former patentee, Lord Marlborough, but the matter was compromised on the Earl of Carlisle agreeing to settle on the Earl of Marlborough an annuity of £300. Soon after this, the Earl of Carlisle being employed on a diplomatic mission, the Earl of Pembroke, then Lord Chamberlain, obtained a revocation of the former nobleman's patent in his favour and supported Sir W. Courteen; but on the Earl of Carlisle's return from his embassy, he remonstrated with the King, who reinstated him in possession of the territory. Wolferstone, a native of Bermuda, was then commissioned by the Earl of Carlisle as Governor, and in 1628 sixty-four settlers arrived in Carlisle Bay, commenced the erection of wooden houses, threw a bridge across the river which intersected the ground, and laid the foundation of Bridgetown, the present capital. The Leeward and Windward men opposed each other, the latter ultimately triumphing. The civil war which raged in England contributed to people and enrich the island; and on the downfall of Charles many families attached to the Royal cause found shelter in Barbados. The island was afterwards governed by Lord Willoughby, a Royalist, to whom it was conveyed by Lord Carlisle, son of the first patentee; but when the island was subdued by the Commonwealth, he was banished. In 1662, after the Restoration, Lord Willoughby renewed his claim, and the kinsmen and heirs of the two earls brought forward demands on the settlers. To satisfy these claims, a duty of 4½ per cent. on all exports was imposed; and under certain conditions the proprietary government was dissolved, and the sovereignty of Barbados annexed to the British Crown. The inhabitants long protested against the imposition of the 4½ per cent. duties, but without

success, and it was not until 1838, four years after the abolition of slavery, that the tax was abolished by an Act of Parliament.

Barbados has not, like most of the neighbouring islands, changed owners ; it has always remained in possession of Great Britain.

General Description.

Bridgetown, the chief town and port, is situated in the parish of St. Michael, in latitude 13° 5′ 42″ north, and longitude 59° 30′ west. This town contains, according to the census of 1891, 21,000 inhabitants. Speightstown, the only other town, has about 1,500 inhabitants.

Carlisle Bay, the harbour of Barbados, is an open roadstead, much exposed to the wind from the south and southwest. There is an inner harbour or careenage, protected by a structure called the Mole Head. It is a port of registry, and had registered on December 31, 1908, eighty-three vessels of a total net tonnage of 17,434 tons.

The island is almost encircled by coral reefs, which in some parts, as off the parish of St. Philip, extend nearly 3 miles to seeward, and prove very dangerous to navigation.

The greater portion of the island is of coral formation, with the exception of the north-eastern portion known as the Scotland district, which is partly enclosed by a semi-circular sweep of the ridge of hills, and is composed of sand-stones, clays, and infusorial earth. In this district manjak, a pure variety of asphaltum, and crude petroleum oil are found. These two substances have been exploited to a limited extent.

Water Supply.

Barbados possesses an abundant and unique water supply. The water, which percolates through the coral is pumped from a great depth and conveyed by means of pipes all over the island, up to a height of 750 feet above sea-level.

Industries.

The chief articles planted for exportation for some years after the settlement of the island were indigo, cotton, ginger, and aloes, besides several kinds of woods; the manufacture of sugar does not appear to have been practised with much success till about the middle of the 17th century, when the cultivation of the sugar-cane increased rapidly, and the plant became in commercial importance, the island's most valuable production. At that period, too, the introduction of African labour was commenced. In 1908, there were 332 sugar-works in operation. The produce has been as follows :—

	Hogsheads of Sugar.		Puncheons of Molasses.
1904	63,604	...	45,061
1905	47,097	...	39,379
1906	57,863	...	61,398
1907	37,752	...	62,112
1908	35,832	...	54,428

The area under the different cultivations is estimated at 60,000 acres. In September 1898, the island in common with St. Lucia and St. Vincent suffered severely from the effects of a disastrous hurricane, when £40,000 was remitted from England to Barbados as her share of the Mansion House Fund.

Cotton.

The first of the recent experiments in cotton growing was started in 1902, in which year 16 acres were planted. From then the area gradually increased until 1907 when 7,194 acres were planted. Last year, however, owing to the decrease in prices at the end of 1907, and to the attacks of insect pests and fungoid diseases, the area was reduced, only 5,769 acres being planted. At the beginning of the industry the British Cotton Growing Association rendered assistance to Barbados, by the loan of six gins, a baling-press, and a disintegrator outfit, as well as a money grant of £100. The first factory erected very soon proved too small for the requirements of the cotton-planting community, and a larger one was erected by the Barbados Co-operative Cotton Factory, Ltd., which had taken over from the Government the small factory they had erected when the industry was in its initial stage. There is also a cotton ginnery and oil plant operated by Messrs. H. E. Thorne & Son, Ltd., of Bridgetown. The total export of Sea Island cotton from Barbados for the crop of 1907-8 was 2,032 bales containing 988,443 lb. of lint, of the estimated value of £66,617.

Population.

The population of the island in 1891 was returned at 182,306, at the end of December 1907 it was estimated at 194,518. At present it is probably not higher than at the end of 1907. This is due to the large number of persons, chiefly of the labouring class, who, attracted by the offer of higher wages, have emigrated to Colon to work on the Panama Canal.

Currency and Banking.

The only Bank doing general business in Barbados is the Colonial Bank, capital paid up £600,000 sterling. Total number of branches throughout the West Indies is thirteen with deposits of about £1,500,000 and a note circulation (five dollar notes) of £350,000. In Barbados the estimated circulation is £30,000. There is also a Sugar Industry Agricultural Bank which was started in 1906, with the grant of £80,000 made to Barbados by the Imperial Government in 1902 to assist the planters in tiding over the losses incurred on the Sugar Industry in that year. With this money as a guarantee fund, the Directors borrow money to advance to the sugar planters for the cultivation of their estates. This, however, is done through the Colonial Bank. There is a Government Savings' Bank, which had, on December 31, 1908, 18,410 despositors, and deposits amounting to £311,842.

Internal Communication.

The Barbados Light Railway runs from Bridgetown to St. Andrew with a mileage of 24 miles, passing through the parishes of St. Michael, St. George, Christ Church, St. Philip, and the lower parts of St. John, St. Joseph and St. Andrew. There is a daily service of trains, and special ones when required. There is also an efficient tramway service for Bridgetown and its suburbs, extending also to Christ Church. A motor omnibus plies twice daily between Speightstown and Bridgetown, and between Oistins' and Bridgetown. There is telephonic communication between the police stations by 35 miles of line, which is open to the public use on the payment of a fee. The Barbados Telephone Company, Limited, a private company, contains a total of about 715 services, with a total length of line in use of about 1,000 miles.

Mail Service.

The Royal Mail steamers arrive at and leave Barbados every alternate week from and to England. The usual length of the voyage from England to Barbados is eleven and a half days.

Besides the Royal Mail, a steamer of the Leyland or the Harrison Line arrives every week from Liverpool.

The direct Scrutton Line from London arrives usually once a month; sometimes, however, two steamers arrive in a month.

The Quebec Line of steamers arrive fortnightly from the United States; the Booth Line call at Barbados on their voyage from New York to the Brazils, and *vice versa*, at intervals of about twelve days; the Lamport and Holt Line have their regular passenger steamers calling at Barbados from Brazil for New York about the middle and end of each month, and in addition two or three intermediate steamers monthly; the combined Hamburg South-American Steamship Company and the Hamburg-American and the Lloyd-Brazileiro Lines call at Barbados to and from New York. The Danish steamers of the East Asiatic Company West India Line have a monthly service from Copenhagen, Rotterdam and London to St. Thomas, the Windward Islands, Barbados, Trinidad, Demerara, Surinam and return; and the Prince Line of steamers call at Barbados on their way from Brazil to New York and New Orleans. The Royal Dutch West India Mail call here fortnightly on their way from New York to Demerara and Paramaribo, and *vice versa*. Messrs. Pickford & Black's Line of steamers run fortnightly between St. John's, N.B., or Halifax, N.S., and the West Indies. These steamers call at Barbados on both the southward and northward journeys.

There is a station of the West India and Panama Telegraph Company in Barbados, and direct cable communication with St. Vincent and thence to the other West Indies, America, and Europe.

Education.

A Government system of Elementary Education was established in 1878. At present an annual expenditure of £11,000 is allowed for this purpose. The central administration is vested in a board appointed by the Governor, and the local control exercised by the clergyman of the district or minister of a denomination, assisted by a school committee. There are 166 schools, with 15,932 scholars (average attendance), and 26,577 on the rolls.

Barbados is the only colony in the West Indies where a University course can be taken, Codrington College being affiliated to Durham University. Its students are eligible for all degrees and licences without the expense of travelling to England. From its two first-grade schools, Harrison and the Lodge, boys have frequently won open scholarships at the English Universities. Harrison College in Bridgetown has a staff of eight University men as masters. The Lodge School in St. John's parish is on a smaller scale, but of equal standard, and being situated on the windward side of the island is more particularly intended, and well equipped, for boarders.

There are four Barbados Scholarships established by the Education Board and endowed by the colony, each of the annual value of £175, tenable at an English University, or at an Agricultural or Technical College in Europe or America, for four years. There are also four Island Scholarships of the annual value of £40 each provided by the Government, tenable at Codrington College for two years.

Constitution.

The colony possesses representative institutions, but not responsible government. The Crown has only a veto on legislation, but the Home Government retains the appointment and control of public officers. The Government consists of a Governor, a Legislative Council, consisting of nine members appointed by the King, and a House of Assembly, having twenty-four members elected annually on the basis of a moderate franchise. The qualifications of members and electors are regulated by a Franchise Act, which became law in April 1884, and which repeals all previous legislation on the subject. By this Act, a liberal extension of the franchise was granted. The Executive Council consists of the Governor, the Colonial Secretary, the Officer Commanding the Local Forces (Police and Volunteers), the Attorney General *ex officio*, and such other persons as may be appointed by the King, and the executive functions of the government are vested in a committee composed of the members of the Executive Council, one member of the Legislative Council, and four members of the House of Assembly nominated by the Governor. This body is called the Executive Committee, and introduces all money votes, prepares the estimates, and initiates all government measures.

Health Resort.

As long ago as 1848, Sir Robert Schomburgk wrote in his *History of Barbados* :—

'It is much to be wondered at that European physicians who are acquainted with the even temperature and absence of chilling blasts, do not recommend Barbados as a sojourn for invalids labouring under pulmonary diseases. The splendid steam packets which now touch at Barbados every fortnight from Southampton render an expeditious intercourse with England quite certain. The mode of living is perhaps cheaper in Barbados than in any other island in the West Indies, and the dwellings combine so many English comforts, as far as they could be adopted in a tropical country, that if it were not for the palm trees which surround them, and the balmy air in January and February, when we know that nature at "home" lies in the very grasp of winter, we should be inclined to ask ourselves—"Are we in England or in a foreign clime?" The roads for carriage drives are excellent. The advantages for sea-bathing are an additional recommendation. But the greatest advantage to be derived from a residence in Barbados is the even, dry temperature, different from the climate of Maderia and the Azores, which is moist and exceedingly variable in its temperature.'

All that he then said remains true. Barbados is the most windward of the Antilles, and catches the first and freshest breezes from the Atlantic borne over 3,000 miles of ocean. The trade winds blow regularly from November to May and temper the tropical heat down to a delicious and agreeable warmth. Barbados indeed possesses a climate unique within the tropics, and is constantly resorted to by enervated workers in Demerara, Trinidad, and South America, while many Americans of late years have taken to spending some of the winter months in the island. The number of English tourists has recently largely increased owing to the facilities and capital arrangements offered by the Royal Mail Company. Barbados being the central place of call, visitors to this island find excursions to the other islands a matter of easy achievement, the length of time between the mails affording adequate opportunities for visiting and exploring the places of attraction and scenes of picturesque charm in which every West Indian isle abounds.

The steamship lines, which afford communication between Barbados and New York, St. John's and Halifax, England, Europe, South America, and other West Indian islands will be found on page 23.

There are several well equipped hotels in the island, principally on the southern, south-eastern and eastern coasts, where ample accommodation may be found by visitors to the island.

APPENDIX A.

Total Revenue and Expenditure for Five Years.

——	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.
	£	£	£	£	£
Revenue	185,056	192,291	204,704	209,818	189,805
Expenditure	183,297	180,932	186,016	188,296	198,865
Surplus	1,759	11,359	18,688	21,532	—
Deficit...	—	—	—	—	9,060.

APPENDIX B.

Total Value of Imports and Exports for Five Years.

——	1904.	1905.	1906.	1907.	1908.
	£	£	£	£	£
Imports	1,069,312	1,042,562	1,192,328	1,271,430	1,225,869
Exports	860,982	935,844	932,966	935,265	948,177
Total value of Trade	1,930,294	1,978,406	2,125,294	2,306,776	2,174,046

LEEWARD ISLANDS.

ANTIGUA.

Antigua is about 54 miles in circumference, and its area is 108 square miles, about half the size of Middlesex. It is the seat of Government of the colony of the Leeward Islands.

The islands of Barbuda (population 775) and Redonda (population 120) are dependencies of Antigua. They have a total area of 62½ square miles. The total population of Antigua and dependencies is about 34,000.

St. John's the chief town, has a population of 9,047. The other towns are Falmouth, Parham, and English Harbour.

There are no rivers and few springs in Antigua, and it consequently suffers during drought. It is in the main low-lying and has no forests. The average rainfall for the year 1908 was 43·79 inches.

Industry and Productions.

The principal products are sugar, and molasses. Of the former, 12,491 tons was exported in 1908, 5,590 being grey

crystals, and 6,901 tons being muscovado. For the manufacture of the first-mentioned, there are two central factories, each of which is doing successful work. Of minor industries, that of cotton growing which was revived in 1902, has received a set-back, chiefly on account of unfavourable weather, and consequently there has been a considerable decrease in the area of cotton planted. The number of estates in cultivation is seventy-three, having a total area of 59,755 acres. Other minor industries comprise pine-apples and onions, and an increased interest is being taken in th egrowing of limes and cocoa-nuts.

In this, as in most of the other islands of the group, the Imperial Department of Agriculture maintains Botanic and Experiment Stations. In addition, in Antigua are situated the Federal Laboratories and the Office of the Superintendent of Agriculture for the Leeward Islands.

ST. KITTS-NEVIS.

This Presidency consists of the islands of St. Christopher (St. Kitts), Nevis, and Anguilla, with their several dependencies.

The total population was 46,466 by the census of 1901, and the total area is about 150 square miles.

ST. KITTS.

The total length of St. Kitts is about 23 miles. The total area is 68 square miles.

The capital, Basseterre, has a population of about 10,000.

The island, which is divided into five parishes, is nearly of a circular form; its area is about 50 square miles, or about 32,000 acres, of which about 16,000 acres are fit for cultviation.

NEVIS.

Charlestown the principal town of Nevis, lies along the shore of a wide bay, and the mountain begins to rise immediately behind it. It has a population of about 1,500. The population of Nevis largely consists of peasant proprietors.

ANGUILLA.

Anguilla is 16 miles in length, and varies in breadth from 3 to 1½ miles, containing an area of 35 square miles.

The island is healthy, but suffers from want of an adequate water supply. The population is computed at 3,890.

Climate of the Presidency.

The climate, for a tropical one, is decidedly healthy. The highest temperature in the shade is about 88° F., the lowest 66°, and the mean average about 79°. The rainfall for the year 1908 was 44·62 inches.

Industry and Productions of the Colony.

Tobacco was at first the principal crop grown, but it soon lost its pre-eminence, and the main industries of the two larger

islands are now the production of sugar, molasses and rum, and the growth of Sea Island cotton. About 17,000 acres are in sugar-cane cultivation and 4,000 in cotton. The sugar crop exported from the Presidency during 1908 amounted to 10,044 tons of sugar, 2,745 puncheons of molasses, and 240 puncheons of rum. The production of Sea Island cotton was 520,637 ℔., of the value of £26,032. Arrowroot, coffee, ground nuts and vegetables are also grown in small quantities for local consumption. Successful experiments have been carried on in the growing of tobacco and cacao, and the prospects are encouraging. Cattle, horses and small mules are raised. Salt is produced in St. Kitts and Anguilla, and to the latter island, the cultivation of Sea Island cotton is of considerable value. Botanic and Experiment Stations are maintained by the Imperial Department of Agriculture in both St. Kitts and Nevis, where agricultural experiments are carried out, and advice given on all agricultural questions.

DOMINICA.

Dominica* lies between the French Islands of Guadeloupe and Martinique, separated from each by about 30 miles of water, and has an area of 291 square miles.

The island is very mountainous and picturesque. There are many thermal, chalybeate, sulphur, and other medicinal springs in the island, which is volcanic, and on the Grand Soufrière Hills there is a geyser or boiling lake at an elevation of 2,300 feet. Imray's View, the culminating peak of the Diablotin range, is the highest land from the Spanish Main to the Greater Antilles. The island abounds in rivers well stocked with fish, and there is a plentiful supply of water power.

The rainfall in Roseau for 1908 was 59·91 inches; the average for the whole island was 106·21.

The chief town Roseau, which is lighted by electricity, had a population of 5,840 in 1904.

Industry and Productions.

It is estimated that about 130,000 acres in the island are at present uncultivated.

Much of this was at one time under coffee, but 'blight' and the marauding of the maroons led to the abandonment of many estates, while the depreciation of sugar has still further reduced the area of cultivation. The soil is rich and the climate healthy, and the island is well adapted to the cultivation of coffee, cacao, tea, limes, nutmegs, spices, and tropical fruits of all kinds.

Coffee, cacao, lime juice, and fruit are the chief products; sugar, formerly the staple industry, is now exported only in small quantities, for in many crop seasons only just sufficient

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* For further information in regard to this island, reference should be made to the Pamphlet *Notes on Dominica, and Hints to Settlers*, issued by the Government of Dominica, 1909. Price 6*d.*, post free 7½*d.*

is manufactured to satisfy local requirements. A considerable trade is carried on also in spices, oils, and timber. The principal exports in 1908 were: cacao, 1,099,900 lb., value £30,362; concentrated lime juice, 122,056 gallons, value £22,885; raw lime juice, 247,100 gallons, value £7,207; green limes, 20,343 barrels, value £9,154; pickled limes, 729 barrels, value £273; lime juice cordial, 21,800 gallons, value £3,270; citrate of lime, 2,512 cwt., value £8,164; distilled lime oil, 4,106 gallons, value £3,490; and hand-pressed lime oil, 754 gallons, value £1,169.

Of late years, Dominica has undergone considerable development, and now that arrangements have been made for insurance against hurricanes, it offers an excellent opening for the investment of capital or as a field for enterprising settlers. Many European settlers with capital have opened up cultivation in the interior.

Rubber is being planted. It grows well and yields a product that has been pronounced by experts in London as equal in quality to the best Ceylon rubber. A cassava starch factory has been lately started in the island. There are over 100,000 acres of land covered with forest, and two Companies are now in course of formation with the object of developing a trade in timber.

There is a telephone service throughout the island, while a comfortable steamer of the Royal Mail Company runs round the coast.

MONTSERRAT.

Montserrat is situated 27 miles from Antigua and is about 11 miles in length and 7 miles at the broadest part.

Its total area is 32½ square miles. It is of volcanic formation, and very rugged and mountainous. The hills are covered with forest, the highest elevation being Soufrière Hill (3,000 feet) in the southern part of the island. The cultivated land is mainly on the western and south-eastern sides.

Plymouth, the chief town with a population of 1,461, is on an open roadstead on the south-west coast.

Industry and Productions.

The cultivation of sugar-cane, once the staple industry of the island, has declined to such an extent that cotton and limes now form the chief industries. Of the former which ranks as the staple crop, 2,000 acres may be said to be under cultivation, and the quantity of lint exported in 1908 amounted to 391,068 lb., of a value of £28,000. Only the Sea Island type of cotton is grown. The development of this industry has been very rapid, as initial experiments were only carried out in 1901.

The lime industry is next in importance. The area under cultivation in limes is about 1,200 acres and this is being gradually extended. The exports of lime products for the year 1908 were as follows:—Raw lime juice, 91,413 gallons; concentrated lime juice, 10,856 gallons; citrate of lime 1,296 cwt., of a total value of £7,482. Citrate of lime is now exported instead

of concentrated juice. There is also a small export trade in green limes neatly put up in packages containing about 250.

Arrowroot is prepared on approved methods, and considerable quantities of the drug, 'papain' are exported. Essential oils, including bay oil, otto of limes, and distilled lime oil, as well as onions and pine-apples are exported on a limited scale. A small onion industry has been established.

There is also a flourishing Fruit Preserving Company which is doing an increasing trade in guava jelly, preserved pine-apples, limes, tamarinds, mangos and other tropical fruits.

The cultivation of coffee and cacao has declined to such an extent that not enough for home consumption is now grown.

Climate.

The island is considered to be the most healthy of the Antilles. The rainfall in 1905 was 49·89 inches, and the mean temperature is about (dry bulb) 80° F., (wet bulb) 73·71° F.

VIRGIN ISLANDS.

The Virgin Islands consist of a cluster of islands to the westward of and adjacent to Porto Rico; the largest in the group belonging to Great Britain is Tortola.

The British Islands (about thirty-two in number) include Tortola, Virgin Gorda, Anegada, Jost von Dykes, Peter Island, Salt Island, and all others not now actually in the possession of Denmark, with the exception of Bieques or Crab Island and Culebra, which are now in the possession of of the United States of America. The total area of the British Islands is about 58 square miles. The Danes possess St. Thomas, St. John, and St. Croix.

The chief town is Road Town, Tortola, population 400.

Industry and Productions.

A small quantity of sugar is made in the Virgin Islands, and during the American civil war the landed proprietors planted cotton, which grows luxuriantly. The cultivation of Sea Island cotton was commenced in 1904, and a cotton ginnery has been erected by the Imperial Department of Agriculture. The peasants own and cultivate most of the land in small plots for subsistence. The value of the cotton produced in 1905 was about £200. They also raise a few cattle and catch fish. They take their produce in small boats to St. Thomas, and this constant sailing among the reefs and currents which surround the Virgin Islands, makes them the finest seamen in the West Indies. They are a hardy, intelligent race, remarkably distinct from the inhabitants of the neighbouring islands. Their trade and intercourse are with the Danish Islands, and to a smaller extent with Hayti and San Domingo. Large quantities of fibre-yielding plants grow wild everywhere in Tortola.

JAMAICA.

Jamaica is the largest of the British West Indies, being 144 miles in length, and 50 in extreme breadth, and containing about 4,207 square miles, about half the size of Wales.

General Description.

The island is very mountainous, the main ridge running east and west, with numerous subsidiary ridges, some parallel to the main ridge, others spreading out in a north-western and south-eastern direction from it, terminating in the famous Blue Mountains in the east, the highest peak being 7,360 feet high. There are numerous rivers and streams, with a rapid fall for the most part, and not navigable. The largest are the Black River, in the south-west, and the Rio Grande, in the north-east.

Kingston, the capital, with a population of 48,504 in 1891, is situated on the south coast of the island, and has a fine harbour. It was badly damaged by a severe earthquake on January 14, 1907. It is estimated that about 1,000 lives were lost, and two million pounds damage done to buildings, etc.

It is estimated that Jamaica contains 2,692,480 acres, from which may be deducted 80,000 acres as useless for agriculture, consisting chiefly of swamps, rocks, and inaccessible lands, leaving 2,612,400 acres available for cultivation. Of this, 81,724 acres are returned as under cultivation in 1905-6. The dependencies (Turks and Caicos Islands, and Cayman Islands) have an area of 80 square miles.

Climate.

There is a great variety of climate ; the mean temperature of Kingston is 78·1°F., rising to 87·8° in the day time, and falling to 70·7° at night. As the temperature falls about 1° for every 300 feet of ascent, it is possible, in a few hours, to reach, in the central range of mountains, a cool and delightful climate. From Kingston, the capital, a change of 10° or 15° in temperature can be attained by a ride of three hours.

The rainy seasons occur generally, and over the whole of the island, in May and October, and last for about three weeks ; but besides these heavy and periodical rainfalls, the ground is refreshed by continual showers ; and in the north-eastern portion of the island there is usually a rainy season at the end of the year, and light rains generally during the month of August. The mean annual rainfall varies throughout the island from about 34 inches at sea-level to as much as 240 inches on the northern slope of the Blue Mountain range.

Industry and Productions.

Fruit, consisting of bananas, oranges, etc., is now one of the largest exports, the output in 1907-8 being valued at £1,193,783.

The other chief crops are sugar (export 10,622 hhds., value £109,773); coffee (export 94,199 cwt., value £141,302); ginger, 1906-7, (export 19,801 cwt., value £27,722); pimento (export 73,925 cwt., value £70,246); and the exports comprise, in addition to those products, rum (export 13,120 puncheons, value £174,953); dye-woods (export 34,178 tons, value £80,958); cacao, 1906-7, (export 31,066 cwt., value £52,813).

The area under sugar-cane in 1908 was 31,178 acres; under coffee 25,547 acres; under banana cultivation 62,164 acres; under cacao 8,290.

The coffee plantations are mainly on the Blue Mountain range. The great fruit-growing district is in Portland, with Port Antonio for its outlet. Sugar is largely grown in the district of Vere in Clarendon parish, and in the seaward parts of St. James and Trelawny, where the best rum in the world is produced. The cattle-raising districts are St. Ann, and in Hanover and Westmoreland, and the western part of St. James. The uplands of Manchester parish are rich in coffee and fruit. St. Elizabeth parish grows a large quantity of log-wood and other dye-woods, as well as maize, and has fine pasture for horses. The cultivation of Sea Island cotton has recently been undertaken. There were only 95 acres under cultivation for the crop of 1907-8, whereas in 1905-6, 61,493 lb. of lint were exported, of a value of about £3,500.

The chief imports are food stuffs, clothing, hardware, alcohol, and building materials. Of the total trade of the island, by far the greater portion is with the United Kingdom and the United States, Canada being next in importance.

LIST OF BOOKS RELATING TO THE WEST INDIES.

In the following list will be found Handbooks, Directories, etc., which give a large amount of information, Agricultural and Commercial in its nature, that is likely to be of interest in connexion with the development of trade between Canada and the West Indies. The list also includes a large number of other books which will be of interest to the general reader, including Histories, works of Fiction and Travel, and works on Natural History.

WEST INDIES

A Winter in the West Indies, J. J. Gurney, 1 Vol., 1840.

Back to Sunny Seas, Frank T. Bullen, 1 Vol., 1905.

British Empire in America, Oldmixon, 2 Vols., 1741.

Camps in the Caribbees, Frederick A. Ober, 1 Vol., 1880.

Chronological History of the West Indies, Capt. Thos. Southey, 3 Vols., 1827.

Civil and Commercial History of the West Indies, Bryan Edwards, 5 Vols., 1819.

Cruise of the 'Port Kingston', Ralph Hall Caine, 1 Vol., 1908.

Cruising among the Caribbees, C. Stoddard, 1 Vol., 1895.

Down the Islands: A Voyage to the Caribbees, William A. Paton, 1 Vol., 1806-1881.

Fables by J. A. Froude, J. J. Thomas, 1 Vol., 1889.

Five Years in Trinidad and St. Vincent, Mrs. Carmichael, 2 Vols., 1834.

Froudacity: West Indian, J. J. Thomas, 1 Vol., 1889.

General Information for Intending Settlers, The Emigrants Information Office.

WEST INDIES.—(*Continued.*)

History of the British Colonies in the West Indies, Bryan Edwards, 1807.

In Sugar-cane Land, Eden Phillpotts, 1 Vol., 1893.

Leisure Hours at the Pier, 1 Vol., 1827.

Letters and Dissertations of the West Indies, Caribbeana, 2 Vols., 1741.

Monumental Inscriptions of the West Indies, Capt. J. H. L. Archer, 1 Vol., 1875.

Narrative of Travels in the West Indies, Sir Edward Seaward, 2 Vols.

Natural History of Nevis, Rev. Wm. Smith, 1 Vol., 1745.

Notes on the West Indies, George Pinckard, 3 Vols., 1806.

Ordeal of free labour in the British West Indies, W. G. Seawell, 1 Vol., 1861.

Peter Simple, Captain Marryat, 1 Vol.

Pocket Guide to the West Indies, A. E. Aspinall, 1 Vol.

Reflections occasioned by the Late Additional Duties on Sugar and Rum in the West Indian Colonies, John G. Kenneys, 1 Vol., 1783.

Residence in the West Indies and America, Lieut-Col. St. Clair, 2 Vols., 1832.

Slavery of the British West India Colonies delineated, James Stephen, 1 Vol., 1824.

Survey of the West Indies, Thomas Gage, 1 Vol., 1648.

Tom Cringle's Log, Michael Scott, 1 Vol.

The Bucanneers of America, John Esquemelint, 1 Vol., 1893.

The Caribbean Confederation, C. S. Salmon, 1 Vol.

The Colonial Office List.

The English in the West Indies, J. A. Froude, 1 Vol., 1888.

The Lesser Antilles, Owen Bulkeley.

The Report of the West India Royal Commission, with appendix, Sir D. Morris, 1 Vol., 1897.

WEST INDIES.—(*Concluded.*)

The Story of the West Indies, Arnold Kennedy, 1 Vol.

The West Indies, C. W. Eves, 1897.

The West Indies, Amos K. Fiske, 1 Vol., 1899.

The West Indies and the Empire, H. deR. Walker, 1 Vol., 1901.

The West Indies and Spanish Main, Anthony Trollope, 1 Vol., 1860.

The West Indies and South America Business and General Directory for the years 1887, 1888, 1889, G. Anceaux, & Co., 3 Vols.

Transatlantic Sketches, Rev. N. J. Chester, 1 Vol., 1869.

Transatlantic Sketches, Capt. J. E. Alexander, 2 Vols., 1833.

Under a Tropical Sky, John Amphlett, 1 Vol., 1873.

Under the Southern Cross, W. F. Hutchinson, M. D., 1 Vol., 1891.

Voyage aux de l'Amerique, R. P. Labat, 2 Vols., 1721.

Voyage to the West Indies, Rover Elwes, 1 Vol., 1806.

West Indian Sketch Book, 2 Vols., 1834.

West Indian Yarns, 'X' Beke, 1 Vol., 1827.

West Indies Common Place Book, Sir W. Young, 1 Vol., 1807.

West Indies before and since Emancipation, John Davy, 1 Vol., 1854.

BARBADOS.

An account of a West Indian Sanatorium and a guide to Barbados, Rev. J. H. S. Moxley, 1 Vol., 1886.

Barbados and other Poems, M. J. Chapman, 1 Vol., 1835.

Creoleana: or Social and Domestic Scenes and Incidences in Barbados, J. W. Orderson, 1 Vol., 1842.

History of Barbados 1605-1801, Poyer, 1 Vol.

History of Barbados, Hillary, 1 Vol., 1752.

History of Barbados, Sir Richard Ligon, 1 Vol., 1752.

History of Barbados, Robert Schomburgk, 1 Vol., 1841.

History and Guide to Barbados and the Caribbee Islands J. H. Stark, 1 Vol.

Memoirs of the first Settlement of the Island of Barbados, 1 Vol, 1743.

Natural History of Barbados, Rev. Griffith Hughes, 1 Vol., 1750.

The Barbados Directory, Biennial, S. J. Fraser, 1 Vol.

The Cavaliers and Roundheads of Barbados, 1650-52, N. Darnell Davis, 1 Vol.

The Geology of Barbados, J. B. Harrison, and A. J. Jukes-Browne,

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JAMAICA.

Account of Jamaica and its Inhabitants, A Gentleman, 1 Vol., 1808.

Annals of Jamaica, Rev. E. W. Bridges, 1838.

Black Jamaica, W. P. Livingstone, 1 Vol., 1899.

Civil and Natural History of Jamaica, Patrick Browne, 1 Vol., 1756.

Descriptive account of Jamaica, William Beckford, 1790.

History of Jamaica, Long, 3 Vols., 1774.

JAMAICA.—(*Concluded.*)

Jamaica in 1905, A Handbook for Intending Settlers and Visitors, Frank Cundall.

Natural History of Jamaica, Sir H. Sloane, 2 Vols., 1725.

Studies in Jamaica History, Frank Cundall.

The Handbook of Jamaica for 1907.

View of the present and past state of Jamaica, J. Stewart, 1 Vol., 1823.

BRITISH GUIANA.

Among the Indians of Guiana, Sir E. F. im Thurn, 1883.

British Guiana and its Resources, By Prof. J. B. Harrison, C.M.G., etc., Director of Science and Agriculture. London: West India Committee Rooms, Seething Lane, Price 6*d.*

History of British Guiana, James Rodway, 3 Vols., 1894.

The 'Argosy' Handbook of British Guiana and Directory for 1909. Georgetown, British Guiana, Argosy Company, Ltd., Price 5*s.*

The British Guiana Directory and Almanack, 1906.

The Geology of the Goldfields of British Guiana, By Prof. J. B. Harrison, C.M.G., etc., Director of the Department of Science and Agriculture. London: Dulau & Co., Soho Square, Price 5*s.*

The Handbook of British Guiana, containing reliable information of the History, Statistics, Resources, etc., of the Colony. Specially compiled for the Permanent Exhibitions Committee. Georgetown, British Guiana. Argosy Company, Ltd., Price 5*s.*

Twenty-five Years in British Guiana, Henry Kirke, 1898.

TRINIDAD.

At Last, Charles Kingsley, 1 Vol., 1871.

History of Trinidad 1781-1813, Lionel M. Fraser, 2 Vols.

Industrial Trinidad.

The Book of Trinidad, Jackson, 1 Vol., 1904.

Trinidad, L. A. A. deVerteuil, 1 Vol., 1884.

Trinidad and Tobago Year-book, H. Collins, 1907,

TOBAGO.

A History of Tobago, H. T. Woodcock,

Hints to Settlers, Imperial Department of Agriculture.

GRENADA.

Directory and Almanack for 1907.

The Grenada Handbook.

ST. LUCIA.

St. Lucia, Henry H. Breen, 1844.

The St. Lucia Handbook, Directory, and Almanack, E. C. Garraway.

ANTIGUA.

Antigua and the Antiguans, 1844.

History of the Island of Antigua, V. L. Oliver, 1894-9.

DOMINICA.

Dominica, a Fertile Island, F. Sterns Fadelle.

Dominica: Hints and Notes to Intending Settlers, By Sir H. Hesketh Bell, K.C.M.G., (revised by Mr. Douglas Young).

History of Dominica, Thomas Atwood, 1791

Notes on Dominica, Symington Grieve, 1906.

ST. KITTS.

A Young Squire of the Seventeenth Century, J. C. Jeafferson, 1878.

Natural History of Nevis, Rev. Wm. Smith, 1 Vol., 1745.

LEEWARD ISLANDS.

Précis of Information, 1904.

STEAMSHIP SERVICE.

Canada is directly connected with the West Indies by the steamers of the Pickford and Black Steamship Company, which run from St. Johns and Halifax, to Bermuda, the West Indies, and British Guiana, and return.

Several lines of steamers run from the West Indies to New York. The Quebec Steamship Company runs from New York to Bermuda and return, and from New York to the West Indies and British Guiana, and return.

The Booth, the Lamport and Holt, the Hamburg-American, the Lloyd Braziliero, and the Royal Dutch West India Mail, from New York to South American ports call at Barbados. Most of these boats call at Barbados on the return voyage from South America to New York.

Opportunities for travel between the Islands are afforded by the Intercolonial boats of the Royal Mail Company, the Pickford and Black, the Quebec, and the East Asiatic Lines.

Several good Steamship lines keep the West Indies in touch with the 'Old Country'. The Royal Mail Steam Packets leave Southampton every other Wednesday, calling first at Barbados. The ocean boat then proceeds to New York, via Trinidad, South and Central American ports, and Jamaica. The boats of the Direct Line of Messrs. Elder Dempster ply between Bristol and Jamaica. Several are specially fitted for fruit trade. The 'Scrutton', 'Harrison', and 'Leyland' lines also run well-equipped boats at fairly regular intervals. The East Asiatic Line connects European and English ports with the West Indies and South America.

The climate is very healthy, and the Islands are yearly visited by an increasing number of tourists, who find in them a pleasant escape from the winter of more northern climates.

WEST INDIAN PRODUCTS.

THE TALIPOT PALM.

A magnificent tropical plant growing at Dominica.

Aloes. The juice, evaporated to dryness, of a fleshy plant of the Lily Order. Barbados at one time exported about £7,000 worth yearly, but the industry is now practically extinct, although capable of being revived at any time should the market warrant it. What are now known on the market as Barbados aloes are probably obtained from Curaçoa and other places.

Annatto. This dye is obtained from the pulpy coverings of the seeds of *Bixa Orellana*, a small tree. It is employed to colour butter, cheese, etc. Exports from Jamaica in 1900 amounted to the total value of £5,800; in 1907-8, £5,716.

Arrowroot. Obtained from the underground stems of *Maranta arundinacea*, a plant of the Ginger Order. The stems are dug, ground up in water, and the pure starch is obtained by washing. St. Vincent is the headquarters of the West Indian arrowroot trade. The exports from that island in 1907-8 were £25,555. Some of the estates were severely damaged in the volcanic eruptions of 1902.

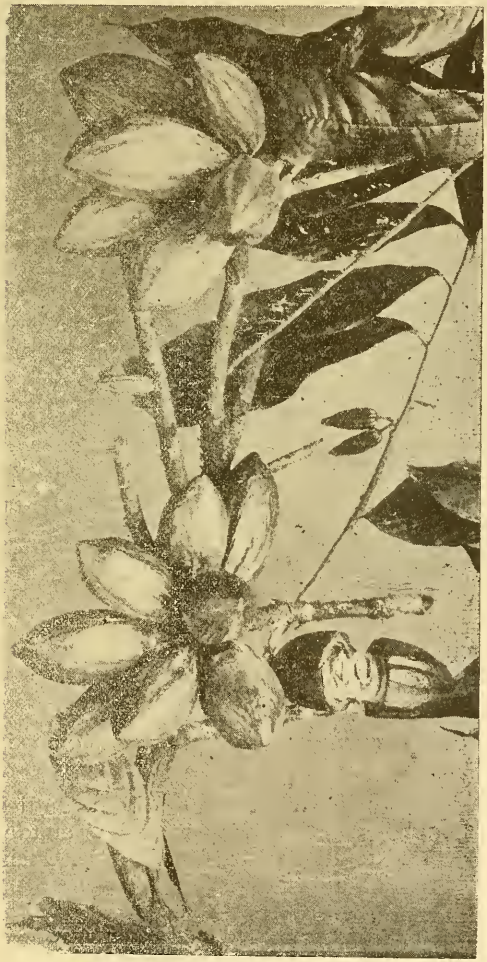
Balata. A substance very similar to gutta-percha, obtained by tapping the trunks of *Mimusops globosa*, a large forest tree found in British Guiana and Trinidad. The value of produce exported from British Guiana in 1908-9 was £98,128. from Trinidad in 1906-7, £86,093.

BANANA CULTIVATION, BARBADOS.

Bananas. Enormous areas are under cultivation in this plant in Jamaica, whence some 16,000,000 bunches were exported last year The. banana is one of the most nutritious

fruits in the world, and is, moreover, seedless, free from fibre, and easily digestible. The fresh banana is a most important article of diet in the tropics of both worlds. Dried bananas and banana flour are palatable and valuable foods. A bunch of bananas in the West Indies costs from 6*d.* to 1*s.* The banana trade of Jamaica was worth over £1,000,000 in 1903, more than fourteen million bunches having been exported. The exports declined considerably in consequence of the hurricane in that year, but have since gradually increased. The variety cultivated in Jamaica is the giant banana, or 'Gros Michel'. The Barbados banana is the dwarf or Chinese variety, similar to the one grown in the Canaries.

Bay Oil. Obtained from the leaves of *Pimenta acris*, a tree closely allied to that which yields Pimento. It is used in the manufacture of Bay Rum and is obtainable from the Virgin Islands, Dominica, and Montserrat.



CACAO.—PODS AND LEAVES.
(From *The Book of Trinidad.*)

Broom Corn. The cultivation of broom corn (*Andropogon Sorghum*, var. *technicus*) has been experimentally carried out in Antigua, Montserrat, and British Guiana, and there are signs that it may be taken up by small growers in Montserrat and Nevis. The results show that very good marketable brush can be grown in these islands.

Cacao. Cocoa and Chocolate which are familar to all, and which are becoming more and more to be considered among the necessities of life, are prepared from the seeds or so-called bean of the cacao tree (*Theobroma Cacao*). The tree does not grow very large, and the flowers and fruits are borne on stout

stalks on the trunks and larger branches. The fruits, which are large pods, are collected when ripe, and cut or broken open. The seeds are put into large bins where they sweat and ferment for some time. Then they are washed, cleansed, and dried.

The cacao tree is eminently a tropical plant, and one that requires careful attention and intelligent cultivation in order to produce the best yields. Much improvement has recently been made in all the processes connected with the industry. Formerly all cacao growers depended on the heat of the sun for drying the beans, but within the last few years very satisfactory driers using artificial heat have been placed on the market and they are coming into general use. In addition to the cocoa and chocolate, cacao beans also yield

CACAO.—BREAKING THE PODS.

(From *The Book of Trinidad.*)

a large percentage of cocoa fat or cocoa butter, which is used in a variety of ways.

The total value of the cacao exports from the West Indies is about £1,400,000, principally from Trinidad and Grenada. The exports of cacao from Jamaica, Dominica, and St. Lucia are increasing.

Cashew Nuts. The fruits of *Anacardium occidentale*, a small tree. The brightly coloured, fleshy portion is the stalk and, if quite ripe, is pleasant to eat. It may also be put up in syrup as a preserve. The roasted kernels of the nut are a favourite article of dessert. They keep well if bottled.

Cassaripe. Prepared from the milky juice of the Cassava and used in cooking. It is an essential constituent of the famous West Indian dish 'Pepper Pot'.

Cassava Meal. The meal obtained from the fleshy roots of *Manihot utilissima* (Spurge Family). When fresh it contains the poison prussic acid, which is quickly dissipated by heat, leaving a perfectly wholesome food. It is also known as Cassava Farine, and makes good cakes, biscuits, etc., which should be lightly baked, buttered, and eaten fresh. Indians in

CACAO.—DRYING THE BEANS.
(From *The Book of Trinidad.*)

the interior of British Guiana live almost entirely on cassava. Tapioca is obtained from the same plant by heating it on hot plates, and, stirring with an iron rod. The starch grains burst, some of the starch is converted into dextrine, and the whole agglomerates into small irregular masses. The roots of the Sweet Cassava may be boiled entire and used as a vegetable. The roots of the Poison Cassava should be roasted.

Cassia Fistula. An ornamental tree 30 to 50 feet high. The pods contain a large number of small seeds, embedded in a pulp that is used in medicine. The bark is the source of tannin and is in considerable demand in some parts of India for tanning purposes.

Chillies or Capsicums. The acrid, biting fruits of small shrubby or herbaceous plants of the genus *Capsicum,* belonging to the Potato Order. They are principally used as a condiment and in medicine. Cayenne pepper consists of the pulverized fruits of the small pungent varieties. Cultivated in Nevis and at several of the West Indian Botanic Stations.

Cocoa-nuts. The fruits of a palm (*Cocos nucifera*). Not to be confused with the Cacao or Chocolate tree, or the Coca plant which yields cocaine. The fibre surrounding the 'nut'

is *coir*, employed in making mats, brushes, etc. The flesh of the nuts yield an important oil, largely used in cooking, illuminating, manufacture of soap, candles, etc., and the source of 'Nucoline', an artificial butter. Copra is obtained from the cocoa-nuts by drying the white 'meat' in the sun, or by steam. The tree has innumerable other uses.

Trinidad exported in 1907-8 cocoa-nut products worth about £45,918. Jamaica exported over 11 million nuts in the year 1908, representing a value of £44,255.

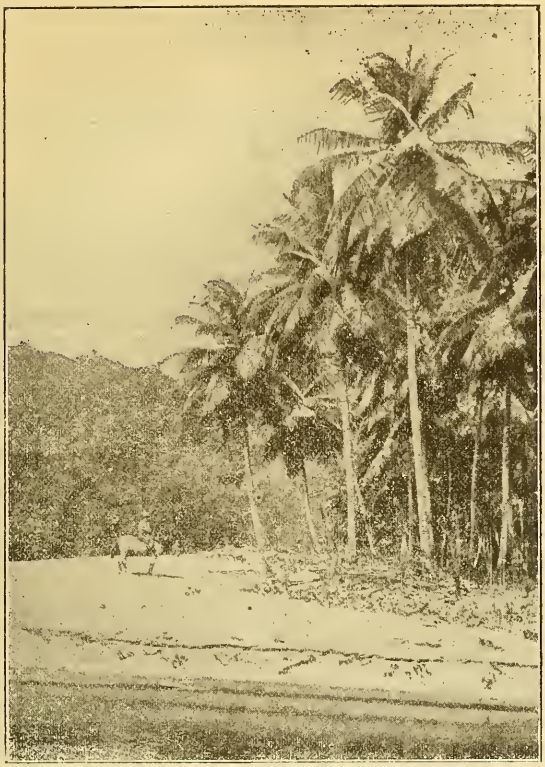
CASHEW.—FLOWERS AND FRUIT.
(From *The Book of Trinidad.*)

Coffee. The coffee plant is a bush with dark-green leaves, and white flowers. The ripe fruit is a fleshy berry containing, usually, two seeds face to face. The flesh is removed by a suitable machine, and the dried seeds form the coffee bean of commerce. 'Blue Mountain' Coffee of Jamaica has a wide reputation. Exported from Jamaica in 1907-8, to the value of £134,283.

Cotton. In former years, cotton was a very important crop throughout the American tropics, but with the extension of the sugar industry, cotton ceased to be cultivated on a commercial scale except in Carriacou, a small island near Grenada.

During the past five years, cotton growing has been widely taken up in all the islands in which the climate is suitable, and owing largely to the encouragement and assistance given by the Imperial Department of Agriculture and the British Cotton Growing Association, the industry has become fairly established, and in Barbados, St. Vincent, St. Kitts-Nevis, Montserrat, Antigua, and the Virgin Islands it has become an important feature, while cotton is also grown at Jamaica and the other islands.

The crop of 1906-7 amounted to 4,086 bales (1,232,417 lb.) of Sea Island cotton, of a value of about £78,000. Sea Island cotton is a very fine, very long staple cotton, which is used for special purposes, as lace-making, etc. West Indian Sea Island cotton has sold in the Liverpool market for as much as 30*d.* (60c.) per lb. In Carriacou where cotton cultivation has never been wholly abandoned, a short staple cotton, Marie Galante, is grown. The average price for this cotton is about 6*d.* per lb.



Cocoa-nut Beach, Tobago.

Cowpeas. Many varieties of this pea (*Vinga Catjang*) are grown; known by such descriptive names as, 'Black', 'Speckled', 'White', and 'Black Eye' Cowpea. Grown for green dressings, and also for the sake of the peas.

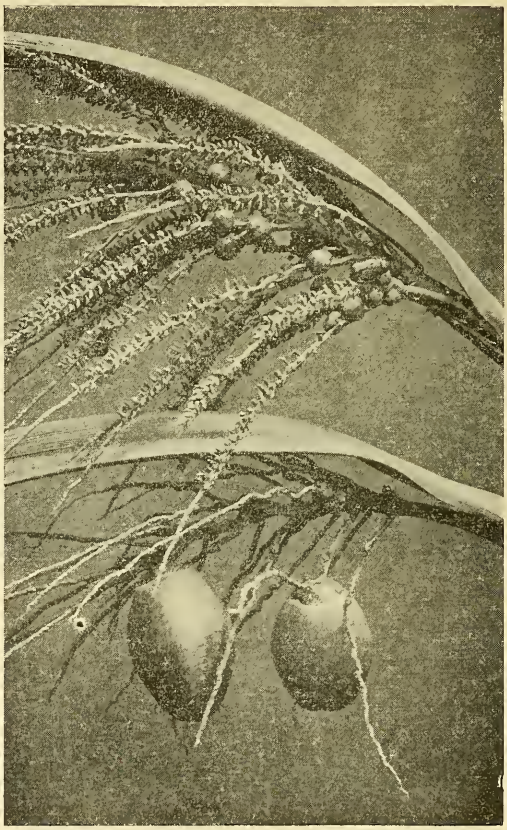
Divi-divi. The cultivation of divi-divi (*Caesalpinia coriaria*) is of importance in Curaçoa and in the two neighbouring islands. The pods are picked when fully ripe, and are one of the most important sources of tannin. Greatly used by tanners. Grown also in Jamaica, from which island there was exported a considerable quantity in 1908.

Fustic. An important dye-wood and timber yielded by *Chorophora tinctoria*, a tree of the Stinging-nettle Order. Exported from Jamaica to the value of £10,551 in 1905. Used locally in all the islands in cartwork to a large extent.

Ginger. The underground stems of *Zingiber officinale*, a near relation of the arrowroot. The stems have to be very carefully cured, an operation requiring considerable skill. Jamaica is the main seat of the Ginger Industry in the West Indies, £27,722 worth being exported in 1905-6.

Grape-fruit. A large Citrus fruit, allied to, although perfectly distinct from, the Citrons and Oranges. An excellent dessert fruit. Hitherto comparatively little known, but steadily coming to the fore on account of its tonic properties. Jamaica exported some £9,110 worth in 1905-6.

Ground Nuts or Pea Nuts. The pods of *Arachis hypogaea* (Pea Family), a trailing plant, with the curious habit of burying its pods in the earth to ripen. Cultivated in the West Indies on a small scale and roasted and eaten or used in sweet-meats. They yield a valuable oil, used in the manufacture of soap, and to adulterate olive oil. The 'cake', after expression of the oil, is an excellent food for cattle.



FLOWERS AND FRUITS OF THE COCOA-NUT.
(From *The Book of Trinidad.*)

Guavas. The fruit of a small tree of the Myrtle Order. The better varieties are eaten as a dessert fruit. Others make excellent preserves. Guava jelly is a well-known West Indian dainty, not put on the market in commercial quantities, generally. The Montserrat Preserving Company, however, is now offering Guava Jelly, Guava Cheese and preserves for sale.

Guinea Corn. One of the Millets (*Andropogon Sorghum*, var. *vulgaris*). Largely cultivated in the West Indies for fodder. The grain is ground into a meal which is used as a food much as Indian corn meal is used, and also as a food for stock.

Hardwoods. The timber resources of some of the West Indian colonies are worthy of consideration. British Guiana has enormous forest areas awaiting further clearing. Green

heart is probably the most exported. Trinidad last year exported large quantities of cedar. Mahogany is sent from British Honduras, and is common in Jamaica, Trinidad, and Barbados. In Dominica a sawmill is at work in forest areas. The woods exported are generally hard, and useful for furni-

GUAVA.—FLOWERS AND FRUIT.

(From *The Book of Trinidad.*)

ture manufacture. They include mahogany, cedar, galba, lignum-vitae, greenheart, bullet-wood, etc. Papers on the timbers of Jamaica and the timbers of Dominica were published in the *West Indian Bulletin*, Vol. IX.

Honey. The bee-keeping industry is being actively taken up in the various islands with every hope of success. Jamaica honey is largely exported and is already well known. The exports of honey and bees'-wax from that island in 1905-6 were valued at £15,000. There are also several large apiaries in St. Lucia.

Kola Nuts. The seed of a small tree, native of West Africa. naturalized in the West Indies. They have remarkable dietetic properties and are used in the manufacture of several beverages. Produced in Jamaica, British Guiana, Grenada and Dominica.

Limes. The fruit of *Citrus medica*, var. *acida*, a variety of the lemon. The lime is distinctly a West Indian plant and is not known, out of cultivation, anywhere else. It can be used for every purpose to which the lemon is put, and is said, by many, to be much superior. It is smaller than the lemon and of quite a different flavour. It is highly appreciated throughout the tropics, and only requires to be imported to become a general favourite in Canada and elsewhere. It is principally cultivated in Dominica and Montserrat, but is also being grown in British Guiana, St. Lucia, and some of the other islands. A very large trade is carried on in raw and concentrated lime juice. Dominica exported more than £52,000 worth of limes and lime juice in 1907-8. Pickled limes are exported to the United States, and the manufacture of citrate of lime, used in the printing and dyeing of calico, is being taken up.

MANGO.—FRUIT AND FLOWERS.
(From *The Book of Trinidad.*)

Logwood. The heart-wood of a small tree, *Haematoxylon campechianum*, of the Pea Order, thriving on waste lands. Jamaica has a large export. The wood yields the valuable and well-known dye. A dye factory is in operation at Spanish Town, Jamaica, for the preparation of logwood extract. Some £68,000 worth of the extract was exported in 1907-8, in addition to logwood of the value of £79,000.

Mangos. The fruit of *Mangifera indica*, a native of the East Indies, now

thoroughly established in the West Indies. Numerous varieties occur; some of the good kinds are amongst the most delicious fruits of the tropics. With care they can be shipped successfully.

Mangrove Bark. Obtained from the mangrove; opposite leaved trees, growing in the muddy swamps of tropical countries. From its astringency it is used in tanning. Obtainable in Trinidad, where the Government let the swamps by tender.

Nutmegs. The seeds of *Myristica fragrans*, native of the East Indies. Grenada exports about £30,000 worth of nutmegs yearly. The ripe fruit of a nutmeg is not unlike a peach in appearance, when growing. As it ripens, however, the thick outer covering splits open, disclosing the brown seed and the brilliant orange-red **mace**. A tree in full bearing is a very handsome sight.

NUTMEG.—FRUITS.
(From *The Book of Trinidad.*)

Okras. A large annual herb (*Hibiscus esculentus*) very largely cultivated for the sake of the fruits, which are used in a green state as an article of food and for thickening soups. With care these might possibly be exported.

Oranges. Occur almost wild in several of the islands, as for instance Jamaica and Dominica, and form an important article of export. The best West Indian oranges are grown under conditions of excellent cultivation. It must be remembered that West Indian oranges have often a green rind when perfectly ripe. Many are exceedingly sweet and juicy. Value of oranges exported from Jamaica in 1908, £90,500. The prospects of Dominica orange cultivation appear to be very satisfactory.

Papaw. The fruit of *Carica Papaya*, somewhat resembling a melon in appearance. A pleasant table fruit, and valuable on account of the digestive ferment 'papain' it

PAPAW.

(From *The Book of Trinidad.*)

contains. The bruised leaves of the papaw are used to render meat tender. Papain is prepared commercially in Montserrat and about £1,600 worth was exported in 1905-6.

Pigeon Peas. The plant (*Cajanus indicus*) bearing these differs from most 'peas' in being an erect shrub, some 6 to 8 feet high. These peas form an important article of diet in the West Indies, being cooked either alone, or with rice, Guinea corn, etc. When dried a 'Split pea' is obtained, known by East Indians as *Dhal.*

Pimento. Allspice or Jamaica Pepper. The allspice of commerce is the fruit of the tree *Pimenta officinalis.* When gathered they are little black unripe berries. They are spread out in a thin layer and cured in the sun, an operation taking about six days. They must be dried quickly before the flavour has time to deteriorate. Exports from Jamaica in 1908 were worth £70,246.

Pine-apples. Antigua and Jamaica export quantities (about £2,000 worth) of the fruits to the American and English markets. Their cultivation is also being taken up with success

PINE-APPLE.
(From *The Book of Trinidad.*)

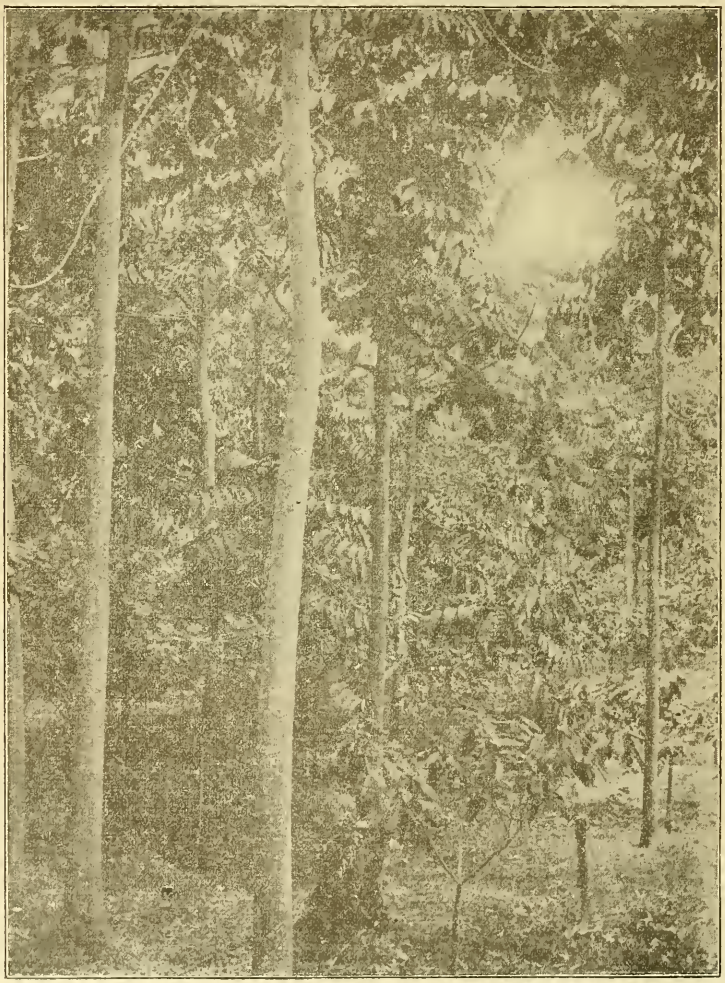
in other islands. Pine-apple juice is a good aid to digestion, containing a valuable ferment. A pine-apple canning factory has been erected in Jamaica, and is being watched with interest.

Plantains. In the West Indies, cooking bananas are called plantains. The name banana is restricted to the varieties eaten as a fresh fruit for dessert. Plantains are roasted, fried, or boiled, and used as a vegetable. They may be grown in any place where bananas thrive, but the plantains ordinarily seen for sale are wild fruits.

Rice. The grain of a grass (*Oryza sativa*) cultivated by East Indian immigrants in British Guiana, Trinidad, St. Lucia, and also in Jamaica. The unhusked grain is called 'paddy'. British Guiana has an area of 23,853 acres in rice. Sugar capitalists have been attracted to the industry, and they are experimenting with mechanical tillage and mechanical methods of reaping. The importation of foreign rice into

British Guiana has fallen from 25,000,000 ℔. in 1899-1900 to 6,000,000 ℔. in 1906-7; 1,550 tons of a value of £18,000 were exported, principally to other West Indian islands, in 1906-7.

Rubber. The more important rubber trees have been introduced into the West Indies. So far, the Central American (*Castilloa*) and the Lagos Silk Rubber (*Funtumia*) are the most promising, and considerable attention is being devoted to



CASTILLOA RUBBER TREES AND YOUNG CACAO UNDER RUBBER, TOBAGO.

these, especially the former. They thrive in Trinidad, Tobago, Jamaica, Dominica, St. Lucia and Grenada. Rubber is obtained from species of *Sapium* in British Guiana, and from *Cryptostegia grandiflora* in the Bahamas. Shipments of Castilloa.

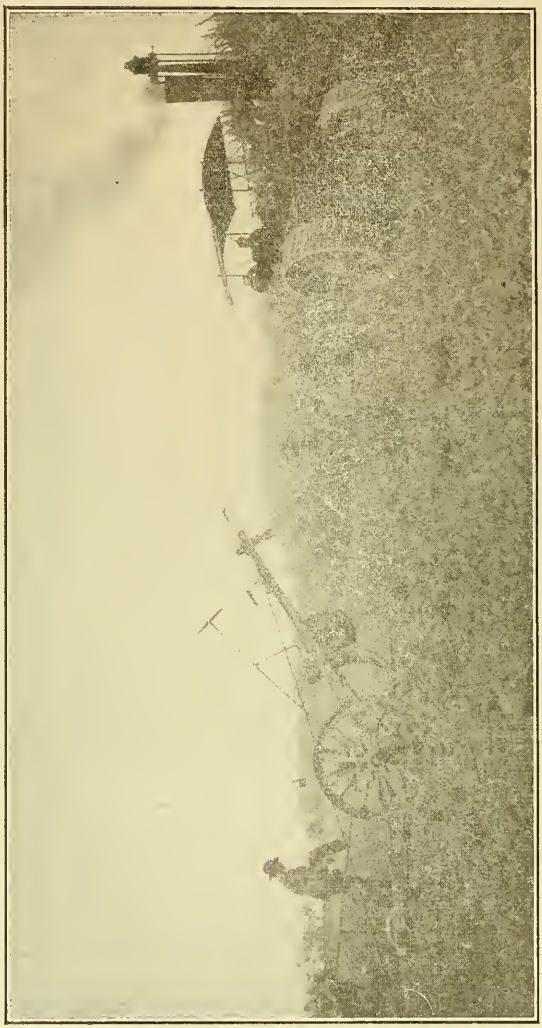
rubber from St. Lucia have realized as high as 5*s.* per ℔., and a shipment from Trinidad was valued at 4*s.* 4*d.* per ℔. Rubber cultivation is being taken up in British Guiana, and an Experiment Station for rubber is being established.

Sisal Hemp. The produce of *Agave rigida*, var. *sisalana.* Many localities in the West Indies are well adapted to its cultivation and there is a possible opening for an industry in this direction. This industry is making rapid progress in the Bahamas. An experimental beginning has been made at British Guiana.

SISAL HEMP.—GATHERING THE LEAVES.

Sugar. All West Indian sugar is obtained from the sugar-cane (*Saccharum officinarum*), a 'grass' reaching 12 feet or more in height. Sugar-canes are propagated by cuttings, and the crop takes about fifteen months to ripen. The cut canes are crushed, and the filtered juice is evaporated to a thick syrup and then put on one side for the sugar to crystalize out. The portion remaining, which does not crystalize, is **Molasses**, and is utilized as such, or it is fermented and made into **Rum**. In some districts of Jamaica, rum pays better than sugar. In many islands, for example, on most of the estates in Barbados, Antigua, and St. Kitts, the old-fashioned method of boiling the syrup in open pans is still employed. The sugar obtained by this process is called **Muscovado**. The grinding in the smaller islands is commonly, although not always, done by windmills. The introduction of steam power for grinding on larger estates has been a great improvement. In British Guiana and Trinidad, particularly, large well-equipped factories have been erected.

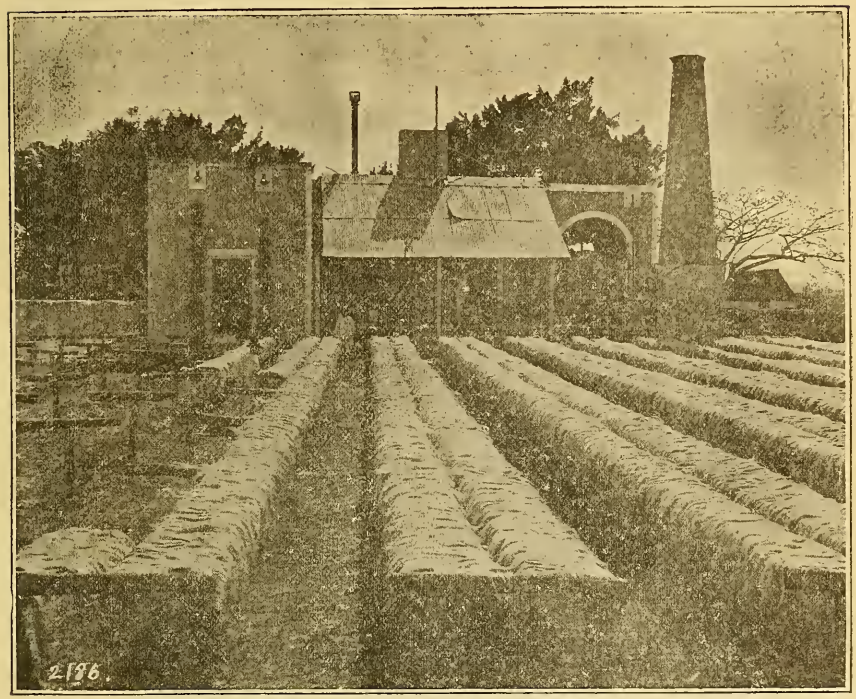
In Antigua also, an excellent though not very large factory has recently been erected. Such factories manufacture the various **crystal sugars** instead of the 'brown', or muscovado



STEAM-PLOUGHING IN TRINIDAD.

sugar. The total value of the exports of sugar, molasses, and rum from the West Indies in 1907-8 was about £2,950,000. British Guiana alone exported £1,340,000. **Molascuit,** a cattle food prepared from molasses and the crushed fibre of the sugar-cane made its first appearance on the export list of British Guiana in 1902-3. The output of this new by-product is rapidly increasing, the quantity exported in 1908 being of the value of £23,193, as against £11,864 worth exported in 1905-6.

Up to 1888, the sugar-cane was not known to produce fertile seed. In that year, Messrs. Harrison and Bovell, in Barbados, showed that it sometimes does, and since then the raising of seedling canes has been an important part of the efforts to improve the sugar-cane industry. The Imperial Department of Agriculture has supported extensive experi-



SISAL HEMP.—DRYING THE FIBRE.

ments in British Guiana, Barbados, and the Leeward Islands. Several thousand seedlings are raised annually, tested in the field and laboratory, and the best are selected for estate trial. Manurial experiments are carried on, and also researches into the diseases and insect pests of the sugar-cane, methods of tillage, etc.

Sweet Potatos. The swollen roots of *Ipomoea Batatas*, of the Convolvulus Order. Grown to an enormous extent in the West Indies, taking the place of the ordinary potato of temperate climates as a staple food.

Tamarinds. The pods of an East Indian tree of the Pea Tribe acclimatized in the West Indies. The seeds are surrounded by a refreshing and laxative pulp. A small trade is carried on in the fruits preserved in syrup. Barbados, for instance, exported about £130 worth in 1907-8.

Tannias. The underground stems of a species of *Xanthosoma*, of the Arum Lily Order. Boiled or roasted they

form an excellent vegetable, and are largely used in the West Indies. The **Eddo** or **Taro** is the underground stem of a plant *Colocasia antiquorum*, closely allied to the above. They are known in Jamaica as **Cocos**.

Tea. The dried leaves of *Camellia Thea*, a plant that is a native of Assam, and probably also of China. Black and green teas are prepared from the same plant by peculiar methods of drying or curing. There are probably at the present time only two tea plantations in the western

SUGAR-CANE IN FLOWER AT BARBADOS.

hemisphere; one in South Carolina, and the other at St. Ann in Jamaica. In Jamaica, there are now from 80 to 90 acres under tea cultivation.

Tobacco. Fine, first-class tobacco is grown in Jamaica, and the cigars from that colony have, within the last year or so stepped to the front rank. Probably the best cigars produced within the British Empire come from Jamaica. Exports of tobacco and cigars in 1908 were valued at £35,378 an increase

of £13,570 over the previous year. Tobacco is also grown at St. Vincent, Trinidad, and St. Kitts.

Tous-les-mois. A wholesome and nutritious starch prepared from *Canna edulis*, a plant belonging to the Canna or Indian Shot Order.

Vanilla. The vanilla beans of commerce are the seed pods of climbing South American orchids, *Vanilla planifolia* and other species. The curing of the bean demands great skill. This cultivation is receiving careful attention at the Botanic Station at Dominica, and elsewhere.

Yams. The underground stems of *Dioscorea*. The Yam shares popularity with the Sweet Potato as a staple food of diet. Many varieties are cultivated. Yams should soon become a favourite food in Canada, if they were generally known.

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